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MEDICAL AND SURGICAL REPORTER.

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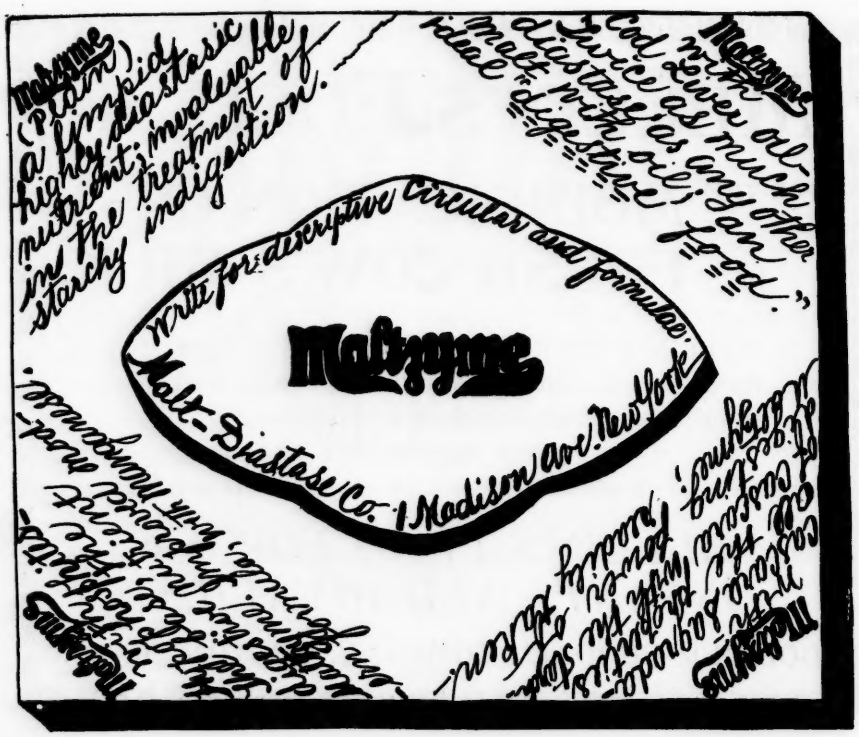
Ohmann-Dumesnil, (*Tri-State Med. Jour.*,) in reporting a case of **hemato-chyluria,** states that it had so far departed from what is usually seen as to form a real curiosity in medicine. The patient was a married woman, 33 years of age, having had two children and several miscarriages. Physically, she was weak and somewhat emaciated. She passed enormous quantities of urine which, upon standing over night, was found to be a jelly-like mass, of a milky hue. The relative quantity of blood, chyle and urine present spontaneously separated upon standing, the chyle having rather an oily appearance. Growing progressively weaker, she died two weeks later from general exhaustion, the hemato-chyluria never ceasing, the large loss of blood evidently increasing the asthenia present. Careful examination under the microscope failed to detect the presence of the Filaria Bancrofti, which is the most frequent cause of chyluria and hemato-chyluria, especially in the tropics. Therapeutic measures proved of no avail.—*Am. Med. Surg. Bull.*

Creasote in Chronic Constipation.—One of the most difficult conditions to treat is that of chronic constipation. The objection to massage of the abdomen and electricity is that they are expensive and require much more time than many patients can give to them. Drugs are usually too powerful, and, once their action is exhausted, are apt to leave the patient more constipated than before. Dr. Vladimir de Holstein, claims that a satisfactory result may be obtained by administering creasote. This drug should be given pure, and not, as usually is done, in alcoholic solutions or in pills. Seven or eight drops should be given twice daily, after a meal, in a glass of water or any other liquid. If the dose is found not to act, it should be increased. Inasmuch as the patient may complain at first of the burning caused by the creasote, it is often well to begin by a smaller dose—say one drop daily—increasing daily by one drop until the desired result is obtained. Not only is constipation done away with, but the appetite increases and the general condition is improved. This treatment should be continued for several months. Dr. de Holstein thinks that creasote does not act as a purgative, but neutralizes some intestinal toxin which causes paresis of the intestinal tube.—A. T. TURNER, in *Therapeutic Gazette.*

Varicose Ulcers.—Sodium Chlorid (finest powder) ten parts and menthol one part form an excellent dressing. The entire surface of the sore, previously cleaned and washed, is to be dusted with this mixture. The menthol is added in order to make the application of the sodium chlorid painless. Under the influence of the sodium the most atonic ulcers do not fail to become speedily covered with healthy granulations. When these latter have replaced the lacking tissue, the use of the mixture is stopped, since salt stimulates only the process of granulation, but does not possess keratoplastic properties, and it will be necessary then to employ the usual means for hastening the epidermisation.—*Exchange.*



Pain in Otitis.—Dr. George H. Powers (*The Medical News*), in reference to the treatment of pain in otitis, says: "At my first visit I found a copious discharge of bloody serum from the ear with hardly a trace of pus. The patient suffered from severe cephalalgia, but there was no special tenderness in or about the ear, and no swelling. Thorough cleansing of the meatus with dry cotton relieved the pain in the head remarkably, and with a dose of antikamnia, 10 grains, he slept some hours."

March 5, New York Skin and Cancer Hospital, on Second Ave., corner of 19th St., was opened with appropriate ceremonies, in the presence of a large number of representative people. Dr. A. Jacobi, president of the Medical Board, made an address, dwelling on the necessity and value of special hospitals, and the work of this the only institution of the kind in the United States. Dr. L. Duncan Bulkley briefly reviewed the origin and early history of the hospital, and its work during the fifteen years of its existence. He called attention to the fact that the old city of New York had grown at the rate of 50,000 inhabitants a year for the past ten years, and suggested that the hospital accommodations had not kept pace with the growth of the city. He mentioned that most of the special departments of medicine had special hospitals, but until the establishment of the New York Skin and Cancer Hospital there had been none of the kind in this city or country. He instanced the large provision made for skin diseases in Paris, Vienna, Berlin, and all the cities of Europe, Great Britain having twelve special hospitals of this kind. Beginning in a very small way, and with no endowment or pledged support, the Hospital had received $375,000 during the past fifteen years, of which $75,000 had come from board of patients and sale of drugs to out-patients. Of the $300,000 contributed from outside, the hospital now had $25,000 invested for five endowed free beds, and had paid $150,000 for the new building, which was free of debt, but it had no permanent or definite income. During fifteen years the hospital had treated 25,931 patients, of which 22,159 had been out-patients, who made 118,154 visits to the hospital and for whom 132,263 prescriptions had been written and filled. The 2,872 in-patients had spent 165,077 days in the hospital. The new building is a modern fire-proof structure of four stories and basement, containing about sixty beds for patients. Of these seven are in private rooms.

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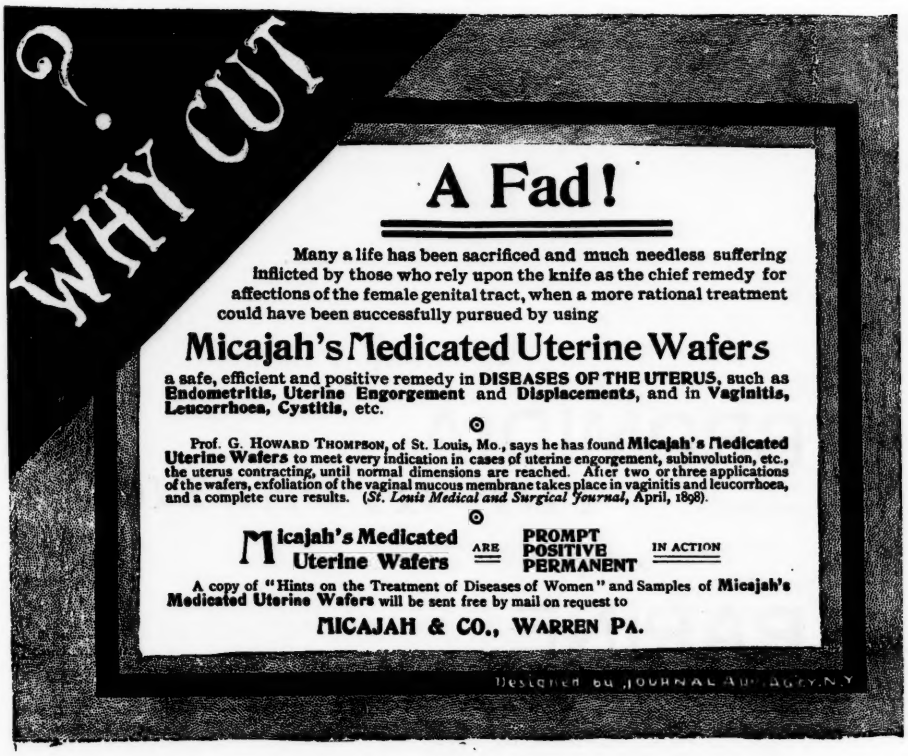
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The Committee of Arrangements announces that preparations for the meeting of the American Medical Association at Denver, June 7-10, are well advanced. A large number of prominent men have signified their intention to be present and read papers, and an excellent scientific program is assured. The indications all point to a large and successful meeting. Convenient and ample accommodations have been secured for the general sessions, section work, registration and exhibits. The entertainment of members and their families is being planned on an elaborate scale and the committee promises all who may come a most enjoyable time. Local excursions are being arranged to take place after the meeting that all may have ample opportunity of visiting various points of interest in the State and seeing the best scenery of the Rocky Mountains.

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The Roentgen rays were recently held responsible for death by an Elmira, New York, court. A criminal was on trial for the murder of a man whom he had shot in the head. The victim did not die immediately but gradually improved for a month, when a skiagraph was made for the purpose of locating the bullet. This procedure was soon followed by the death of the wounded man, and the defense alleged that the sudden demise was occasioned by the action of the X-rays on the brain. The jury accepted this theory and the murderer was acquitted.

There were 38,857 deaths in New York City during the past year. Granting that the metropolis of America of 1,990,562 inhabitants, the percentage of deaths to population for the period mentioned is 19.2 per thousand, which is, according to the final report of the president of the health board to the mayor, the lowest mortality in the history of the city. In the number of deaths in infancy and from diarrheal diseases a notable decrease has been observed. This wholesome result is attributable to the improved sanitary conditions which obtained.

There are 460 medical missionaries in the world, the increase for the past five years numbering 122. Two-thirds of these pilgrims are men, the remaining contingent being represented by women. The denominations leading in the supply are the American Presbyterians and the American Methodists, the former having 71 in the field and the latter 55. The missionary societies in the United States maintain 246; in Great Britain, 174; in Canada, 21. The distribution of this grand army of religio-medical workers gives China 168; India, 165; Africa, 44; Syria and Turkey, 34; and the remaining 49 are scattered over nearly a score of other countries.

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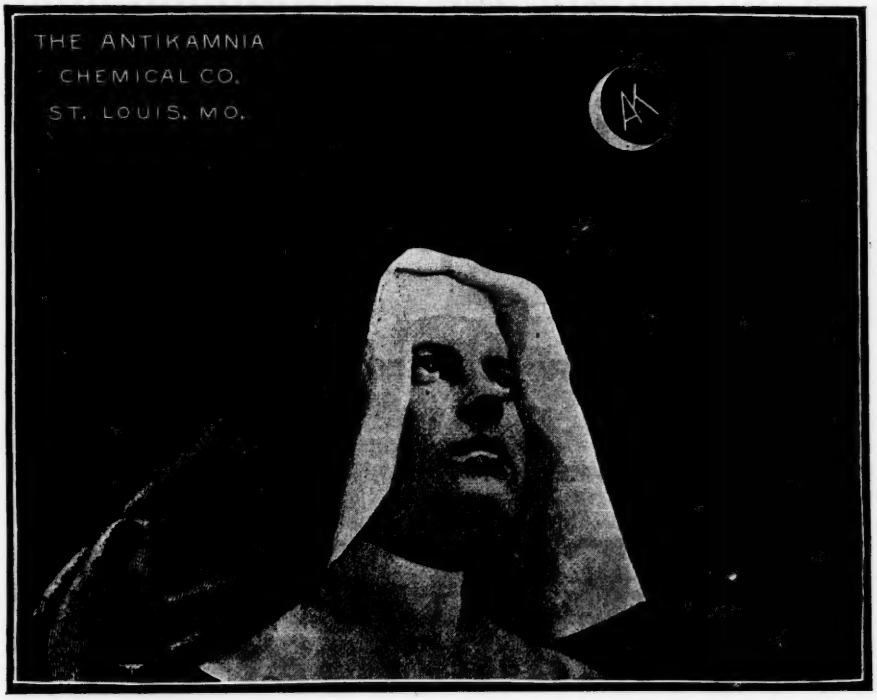

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MEDICAL AND SURGICAL REPORTER.

Vol. LXXVIII. Whole Number, 2133. APRIL 30, 1898. New Series. Vol. I—No. 4

ORIGINAL ARTICLES.

EXTRA UTERINE PREGNANCY.

MORDECAI PRICE, M.D., PHILADELPHIA.

In the condition of extra-uterine pregnancy there are very many questions, not finally settled, of vast importance. It is important that the practitioner should be familiar with all the more prominent symptoms of an accidental misplacement or deviation from lines of normal pregnancy. All cases of suspected pregnancy in women who have had a period of sterility should be carefully watched in the early months for symptoms of tubal gestation. I do not know of a single case where there was a history of rupture, with well marked symptoms of loss of blood, where rupture did not take place before the twelfth week. All these cases must of necessity first pass through the hands of the general practitioner and are lost or saved through his appreciation of the symptoms and ability to make a diagnosis.

If the real character of the accident goes unrecognized, the great majority of these cases of extra-uterine pregnancy perish. Death is almost certain and in very many instances sudden. They perish in the majority of instances because of the failure of the physician to make a diagnosis—dying of hemorrhage—septic peritonitis, obstruction of the bowel, etc. That there are instances of recovery in ectopic pregnancy we are not prepared to dispute. For there being instances we have the authority of eminent English surgeons, Mr. Tait, Bantock, Gregg, Smith, Taylor and others, and recoveries are reported by a number of American surgeons.

Our earlier gynecological literature—that antedating modern advances in abdominal surgery, abounds in the report of cases—which, from the history of symptoms and conditions, can only in our present light, be interpreted as ectopic pregnancy. These cases were classed under the head of hematocele. We have no right because an occasional case recovers after months of suffering to deliberately subject a patient to the risks of expectant treatment. The word "variety" used in connection with ectopic gestation has very little practical interest to those of us whose sole object it is to save life. For my part I have never in my own work, or in that of Dr. Joseph Price, cases which number now about 175, seen but one "variety," that of tubal pregnancy. I have seen them in all stages from the first to the tenth month—have seen three cases living and at term—and I have yet to see the first case developed in the broad ligament. I have seen the ovary stretched over and part of the capsule inveloping the child, and this by some probably would have been called an ovarian pregnancy.

The symptoms of extra-uterine pregnancy are almost unvarying. It is rare indeed for the symptoms of this condition to be taken as evidence of some other trouble—but it is not an infrequent occurrence for other conditions to be taken for extra-uterine pregnancy. Mr. Lawson Tait has made this subject one of thorough investigation, and, having made public the lessons of his wide and successful experience, it would seem that little aside from what he has said is worth saying. We cannot do better than follow his teaching and record as successful experiences.

There can be but two reasons for making mistakes in diagnosing this condition, ignorance or carelessness.

It may, and repeatedly does, occur that the practitioner recognizes the condition—but is without that surgical experience which would enable him to surgically deal with it. Here the duty is plain, that of promptly calling to his assistance one as expert in the surgery of such cases as is at his command. It is equally imperative upon the surgeon to promptly respond.

The possibility of these cases going to term is not disputed. My theory as to the probability may not accord with that of many of the profession. I have seen three cases at or near term—all the children were encapsuled in an amniotic sac and none of them in the broad ligament. My reasoning is that the child is forced through the rent in the tube encapsuled in its amniotic sac, and if the placenta has sufficient attachment to continue the life of the child until the placenta has made new attachments—the child continues to develop in its sac surrounded by the abdominal viscera, coming in contact with it, forming adhesions, and in this way materially aiding and strengthening the walls of the sac. I am of opinion that the reason why we so often find the child absent in undoubted cases of tubal pregnancy, is not only that the tube has been ruptured, but also the amniotic sac and the child forced

into the general peritoneal cavity, where a few days will suffice for its digestion. As to just how soon the child can possibly be protected by the amniotic sac I am unable to say. I have found the fetus not larger than a lima bean but it was in those cases where the primary rupture and the operation for the relief of the patient followed immediately. It is rare indeed to find a child where there has been several attacks of pain or several severe hemorrhages, but everything else, the ruptured tube, placenta, and all that pertains to a ruptured tubal pregnancy, save the child, may be found. I have seen a number of cases from the second month on, where it could be clearly demonstrated that the child was within the amniotic sac. I have a beautiful specimen at the fourth month that well illustrates this point. In this connection Mr. Tait uses the following language:

"I have at this present moment lying in these very rooms a fetus of the full term which I removed from among the intestines and round which nearly complete amniotic membranes were to be seen."

I do not deem it possible that a child could live long at any period of gestation free in the peritoneal cavity. The impression is that it would be encapsuled by the omentum or protected by a barrier of inflammatory production in some way. There are a number of cases on record of the fetus having been found in the peritoneal cavity, but there is very little to explain or show how long they had been so placed or how protected. My case at term, reported some five years ago, where both mother and child lived, was in the tenth month of gestation. The child was in the amniotic sac. When the nurse attempted to wash the child, she found that the slightest rub of the wash-rag would take off the skin; the child would bleed from every point so touched, showing that the process of "digestion" had been begun during the life of the child. The mother and child are both today living and well. The child is a beautiful little girl.

I will digress for a moment to show the value of statistics. This case is reported in Gregg Smith's "System of Abdominal Surgery," as operated on by one Eastman of Philadelphia, a man not known to exist there as the only case in America where mother and child both lived.

As to the manner of dealing with the placenta, where it is possible the placenta should be removed. Where it has not contracted adhesions outside of the pelvis and involving bowel and mesentery in its attachments there is probably less danger in its immediate removal than to heal it in any other way. It is only rarely that one can obtain a pedicle and control the hemorrhage by ligature. The gauze pack is probably the only method in many cases by which hemorrhage can be controlled. Up to the beginning of the fourth month there is no trouble in controlling hemorrhage by ligature—from the fourth month on hemorrhage is the most serious complication.

The second method of dealing with the placenta is what is called the open treatment and was the one used in my case at term with the result of saving both mother and child. For thirty-five consecutive days, this poor woman existed with an abdominal wound six inches in length, the amniotic sac stitched to the wound. Twice daily the wound was packed with from four to five yards of bichlorid gauze over the face of the placenta, as large as the rim of a man's hat. It was attached to everything from the left cornu of the uterus, descending colon and part of the transverse colon and over the entire face of the left kidney.

The placenta was black and gangrenous in appearance and, owing to the desperate condition of the patient, three determined efforts were made to remove the placenta. The effort had to be abandoned on account of the frightful hemorrhage. Gauze packing in each instance stopped the hemorrhage at once. On the tenth day when the first attempt at removal was made, her temperature dropped to 96°. The temperature chart indicated variations of temperature from 96° to 105° for thirty-five days.

At the time the whole left side of the body seemed to contract just as the womb does in labor, with free discharge of blood. I at once removed almost the entire placenta, cutting it loose with the fingers just as we do from the uterus in a partially detached placenta, meeting with about the same amount of difficulty. There was free hemorrhage which was controlled by gauze pack. This immense opening had almost entirely closed in a week's time. I am positive that after my experience with hemorrhage, sepsis and other accidents incident to this manner of treating the placenta, that I would attempt again the open method and leave the placenta to slough away.

It is out of the question to talk of removing the placenta at time of operation. The patient would beyond doubt perish with hemorrhage. I believe it to be better to cut short the cord, thoroughly clean the face of the placenta, remove all loose membranes and clot and close the abdomen, trusting to absorption, or, later, when the condition of the patient indicates the necessity to a second operation. I recommend this because it cannot possibly offer any poorer chance for the patient than did the open treatment.

Where the placenta is placed in the pelvis and is attached to either ovary tube, womb or pelvic wall, and, it may be, only slightly to the abdominal viscera, the entire extra-uterine mass can and should be removed at the operation at any cost; but when the placenta has formed attachments to vital organs and extends over a large surface the patient would perish if removal was attempted.

These questions can only be decided by those who have many times dealt with such cases. It is nonsense to say that any surgeon can cope with such cases, no matter what his skill in other departments of surgery; he must be an abdominal surgeon to deal successfully with them. He must also have special training in abdominal surgery to meet all the possible emergencies of these cases.

In a report of nine cases in the London hospitals in the later months of extra-uterine pregnancy five perished—certainly a large mortality. These cases were in hands of probably some of the best surgeons in the world. From the high mortality I should infer that they were men not specially trained in abdominal surgery.

The operation for extra-uterine pregnancy in ninety-nine times in a hundred is an operation to save life from hemorrhage. Usually sufficient time has already elapsed to leave the patient pulseless and in collapse. This collapsed condition results first from direct loss of blood and second from intra-peritoneal pressue on the abdominal sympathetic nervous system. The indications are the immediate stoppage of the hemorrhage. The only way to do this is to open the abdomen and tie the vessel, no matter what condition of collapse the patient is in, so she is not actually dead.

More than half the cases I have operated on have been pulseless at the wrist and to all intents and purposes almost at their end. In many of these cases so soon as the abdomen was opened and the ligature applied the hemorrhage stopped and the great quantities of free blood in the peritoneal cavity removed, sometimes amounting to two or three quarts of blood, there would be a moderately good pulse at the wrist.

In referring to this fact in a discussion Dr. Hobert Hare, of Philadelphia, called my attention to some experiments he made by forcible injections of water into the peritoneal cavity of a dog, saying that this would kill him much quicker and with a very much less quantity than if injected into the bowel. I believe this explains the quick recovery from the grave symptoms of ruptured extra-uterine pregnancy after operation. In other words, the hemorrhage is stopped and the pressure removed from the sympathetic nervous system.

It is to be presumed that when a man operates for extra-uterine pregnancy he has made a diagnosis. There can be but little shock in an operation that involves only two inches of the abdominal wall, the delivery of the specimen and the application of a ligature. How is it possible for any one to justify delay when we compare this procedure with the actual condition of the patient suffering from hemorrhage and intra-peritoneal pressure, with everything pointing to rapid dissolution.

Later in the surgical treatment of this condition — say from the fourth month on to term — there are questions to be considered before operation far more important than hemorrhage. We have then to consider the dangers during and after operation and how to deal with it. It is these very dangers that have interested the profession in the later months of extra-uterine pregnancy. I contend that no matter at what period of gestation the woman may be, an effort at once should be made to end the pregnancy by surgical means, for there is not an hour that she is not in danger. And every day that the fetus is allowed to remain the risk to patient will increase. For this reason it should be terminated. The united surgery of the world has only been able to save from eight to ten children where these cases have reached term with a mortality to the mother that by no possible argument with simple humanity in the balance, would justify.

If the peritonean can be left with everything removed with well placed glass drainage at the lower point of the wound, it will result in an ideal termination and will guarantee a safe recovery with the least possible risk. If the hemorrhage cannot be controlled without a gauze pack, we should then depend on gauze drainage, which, while it will save life, greatly prolongs the after-treatment.

The toilet of the general penitoneal cavity should be perfect, it should be faultlessly clean and kept so. If there has been any contamination, from any cause, washing with clean, boiled water should be done in a most thorough manner.

Quarantine.

It is no time to try experiments when such an emergency as this exists. Even admitting that the Marine Hospital Service is not perfect, it is at least existent, and it should, in our opinion, be at once clothed with the necessary powers, if only for the present summer, to do whatever is necessary to protect our people from a pestilence more destructive and more pitiless than war.—*Medical Record.*

Anomalous Position of the Internal Carotid.

Dr. Thompson (*Laryngoscope*) reports a case with an anomalous position of the internal carotid. On examining the pharynx of a young woman a distinct arterial pulsation was observed behind the posterior pillar of the pharynx on the left side. External palpation showed the artery absent from its normal position on that side. There was no history of pain in the throat or symptoms of aneurism. The right side was apparently normal. The course of the left artery in the pharynx was very superficial apparently just beneath the mucous membrane.

This case would be one to remember and record among the rare anomalies of the carotid.

AN INTERESTING CASE OF MALARIAL CACHEXIA.*

IRWIN H. BOYD, M.D., PHILA.†

When we have terminated successfully the treatment of any unusual case, no matter how rare or how obscure the malady may have appeared during the different stages, it seems to be changed in its intensity and perversity as we look back over the different courses it has pursued. In the incipiency of the case under consideration before a diagnosis had been definitely determined, the contrariness of the symptoms seemed puzzling; and even now when the patient has fully recovered these same difficult, differing diametrically signs have not all yet been satisfactorily explained, although most of them have unraveled themselves and the case seems not quite so uncommon or anomalous as it at first appeared.

In describing the case I am afraid that the uncertainty of diagnosis which seemed to surround it when it was viewed at the bedside as the symptoms were presented before a definite time of treatment had changed their direction toward improvement and recovery, cannot be preserved, inasmuch as I feel that this paper would prove of much more practical value if the symptoms and their changes under treatment are described *seriatim*. My meaning is best understood when we consider what happens when mercury causes the disappearance of an enormous gumma, being sometimes administered on the day after a consultation in which well-known surgeons have diagnosticated a sarcoma, a tumor needing removal. Such things occur frequently. So while treatment often confirms diagnosis it also often makes the diagnosis causing surprise that the later conclusion was not earlier reached.

G. M., a white girl, twelve years of age, quite tall and naturally very thin, although eight weeks of sickness has caused such a reduction in weight that one could imagine her build better should I say she is but a skeleton; naturally erect she now stoops a little. Her cheeks were a rosy color and her disposition was quite lively; at school she was a favorite and she always stood at the head of her classes. Previous to the present trouble she has never been sick, while her parental history, at least on her father's side, is as good. Her father's grandfather died at 92 and his grandmother at 103, not having had any serious illness before their last; her paternal grandfather and grandmother are still living, aged 68 and 60, respectively, having a history of no illness whatever. The girl's father is living, a very large, robust, healthy-looking man, a mechanic by trade, and also reports "never having been sick a day in his life." The mother died a few months ago at the age of 35, and from their description she had heart trouble, producing anasarca and pulmonary congestion. Two brothers of the patient died but a short while ago, one aged three months and the other nine years, the oldest dying from an injury received while playing in the street. There now remains in the family the girl, her grandparents, her father and two younger sisters; and all but my patient are healthy, fat, and have rosy cheeks. Such is the family history.

The present trouble began November 5, 1896, with itching about the vulva, followed in a few days by swelling of the right labium. Three days from the appearance of the itching, three small sores appeared on the right labium, which ulcerated, becoming quite deep. Under treatment by another physician, (who, from the nurse's description of how they used the medicines and the direction on the box and from its contents probably prescribed mercuric bichlorid as a wash and calomel for a dusting powder) the sores healed without leaving scars or other reminders of their having existed.

Three weeks intervened between the first of the itching and the dropping of the scabs, and during that time the patient was confined to bed with the daily temperature keeping at about 103°, as the doctor attending the case informed them, and with this fever the girl was extremely chilly all day, having to lie between blankets and with extra covering on the bed to keep warm. There were no intermissions in this chilly condition, except as sufficient covering warmed her and then she continued warm until uncovered. After about three weeks of treatment the physician in charge gave up the case, and for two weeks she had no treatment of any kind. November 25, one week after the doctor ceased his visits, she was allowed to go to the theater after she had pleaded quite hard, and although she seemed to enjoy it, she returned home tired and chilly, while three days later she began to cough and complain of a pain in the right side.

I was called in December 9, five weeks after the first symptoms were noticed, and prescribed for the cough and had a mustard plaster put on the sore spot. The temperature at that visit was 104°, the appetite was good, tongue clear and bowels normal; the patient was bundled up in a heavy shawl, the face expressionless and drawn, as from cold, and had lost its naturally rosy appearance, having instead a saffron-yellow color; the lips were blue, hands cold and finger nails were blue. Such was her appearance all day and while the temperature was 104°. She complained of being chilly *all* the time, unless bundled up well and sitting behind a hot stove in a room so uncomfortably hot that her father could not remain in it.

I have tried to lay some emphasis on this chilly condition of which she complained, as it is one of the most peculiar phenomena in the disease.

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She was chilly or cold at *all* times, unless in an intensely hot place. There were no actual chills, which pursued their own course independent of blankets or heated rooms, but a state which was easily overcome by plenty of warmth and when warmed thoroughly the natural rosy color of her cheeks seemed to return, she threw off partially her moping, whining tendency, and in all things became more like her former self, but never completely reaching the naturally lively disposition.

She was put to bed at once and on the next day the temperature was 105°, the pulse 128, the bowels constipated, while the cough had gone and the pain in her side only appeared on taking a long breath. A cold bath brought the temperature down to 101°, only to creep up again to 105° on the afternoon of the 11th, when a second bath brought it down to 99° and it never again reached above 104°, as treatment was instituted and began to tell.

December 10 she was chilly at all times; her lips were blue and her face pinched, unless lying between blankets and well covered, when, as stated before, the color came into her cheeks—not a general flushing of the face. She had one or two very light sweats at this time which occurred at no other stage of the disease and these would probably not have been noticed had I not asked that a watch be kept for sweating. There was no change in the chilly condition.

On the 11th the cough had ceased entirely but the side was tender where the mustard plaster had been. For the first time there was no chilliness present and yet she had nothing over her but a counterpane and only an undershirt on her. This seemed strange and I have since wondered at the probable cause of its sudden disappearance. In the morning the temperature was 101° but at 4 p. m. she had a temperature of 105°, and not having satisfied myself of the nature of the disease, she received the second cold sponge bath, notwithstanding her chilliness. She dreaded these baths, and so I said that if her temperature did not reach 105° again I would not order another, but as a preventive, asked that no extra clothing be put over her, and so you can therefore see the reason of my surprise when I called at 10 p. m. to find the temperature had fallen to 99° and she was comfortable without the extra blankets.

Previous to this bath the nurse informed me that the patient kept her eyes closed most of the time as if sleeping, and when roused started up as in fear and threw her arms about like one frightened. She would then appear nervous, but it was singularly noticeable that while I often found her lying perfectly quiet with her eyes closed as though sleeping, she merely opened them when I spoke, seeming wide awake enough, yet showing none of the symptoms the nurse had described to me. As I said she dreaded the baths, and from the time the last one was given she seemed livelier and more cheerful, keeping her eyes open most of the time.

I examined her thoroughly and found that the liver was normal in size, of uniform dulness and consistency and no tenderness except where the plaster had been. There was no jaundice. The lungs and heart were normal but I found that the spleen was enlarged and could be felt with ease below the edge of the ribs. Examination of the urine showed that it contained no albumin or sugar. The glands of the neck and groin were examined, but none were enlarged, no scars were visible on the labium where the sores had previously existed and the hymen was intact, these last points excluding possible specific causes of the sores. The pain that she had first complained of in her side was said to have gone on the morning of the 11th, but in the afternoon of the same day she spoke of a pain, which was in the region of the eighth rib on the right side, when it was red from the plaster. On looking closely I observed a small bluish spot which she regarded as more painful to the touch than any other part of the inflamed area, but this extreme tenderness I noticed was only present when she was watching where I touched. The chilly condition which had disappeared after the last bath did not reappear.

Preparatory to beginning quinia treatment to massa hydrarg. gr. x. at night of the 11th, and rochelle salts in the morning of the 12th, were given, and at noon of the 12th she began to take five grains quinia every five hours. From this time on improvement became quite noticeable, as the fever ceased its extreme alternations, gradually reaching the normal, where it remained, with two exceptions, when it rose but a degree or two. On the morning of the 12th she complained of shortness of breath, saying that deep breathing made the pain in her side much worse. I again examined over and around the seat of pain, the eighth rib, right side, but could find nothing wrong with the liver or lungs and the only satisfactory explanation of the cause of pain appeared to be that deep breathing seemed to stretch the skin made tender by the plaster. Had the pain been on the left side it could have been easily explained, as the spleen had increased considerably in size and firmness since I examined it on the morning of the 11th, and it could now be readily felt and moved, while percussion showed such an increase of dulness that the stomach tympany was obliterated as the dulness from the spleen was not easily separated from the heart dulness. The chilly feelings which had not appeared since the bath were evidently done with, but just before noon on the 12th a new feature presented itself in the form of two distinct but not severe chills, one in the morning and one at noon, yet there was no sweating with either of them. I arrived on my morning visit just as she was having the first chill and immediately obtained some blood, which an examination

showed contained nothing to help in the diagnosis. I examined especially for the plasmodium. The last chill was about 12 m. and the first dose of quinia was given at 1 p. m. Lead water and laudanum, which was ordered for the pain in the side, seemed to help her, and as the pain left the breathing became easier and it also seemed to increase the appetite, for shortly after she stated that she was very hungry.

On the 15th she was sitting up in bed and singing for the first time in five weeks, and with the exception of a diarrhea on the 16th, she steadily improved, going down stairs on Christmas morning, and but a short time afterward was going to school. As stated before quinia, five grains every four hours, was given at first, but this was increased next day to five every three hours, and combined with three drops of Fowler's solution every three hours, then later, after she had left the bed, six grains of quinia and five drops of Fowler's was given three times a day. Later still, when she was walking around the house, the quinia and arsenic was dropped and a pill of iron gr. 1, arsenic gr. 1-100, strychnia gr. 1-60, was substituted together with beef, wine and iron. Under this line of treatment she began to gain color and brightened up rapidly.

The remarkable results produced by the quinia, which was given every three hours for eight days, would now aid in the diagnosis or at least tend to confine opinions to more definite lines. To my own mind the disease has presented but one diagnosis and that was made in the beginning—malarial fever of the cachectic form. My diagnosis was based on the peculiar anemia giving the saffron-yellow color and the enlarged spleen, together with the chilliness and the fever.

Some of the symptoms have seemed to be doubtful in their existence, as though the patient was malingering. Take, for instance, the peculiar symptoms described by the nurse as the patient was awakened from sleep, or the tenderness of the bluish spot when she was watching where I touched and, especially her disposition during convalescence, when she was advised to keep out doors, but remained only a few moments and then came in seeming tired out, was peevish and cross and moped around, refusing to do any work. Her father, who had feared he was going to lose her, naturally took her part, petted and allowed her to remain idle, believing she was as weak as she made out until I told him very plainly what I believed, when he determined to make her go out. From that day she could stay out without being tired and even beat him that afternoon in a walk around the block; at the same time work appeared to become easy and enjoyable. The sudden cessation of the chilliness upon threat of cold bath, may indicate that it also was due to malingering.

It was said by a well-known physician that there was a patient at the University of Pennsylvania Hospital who could raise the mercury in the thermometer at will, whether the thermometer was placed under the tongue, in the axilla or rectum. I do not feel that I can claim this for my patient, although on two separate occasions I had noticed different temperatures when the thermometer was inserted twice, but without any interval and on the same side of the mouth. On each occasion the temperature seemed to be quite low, and I remarked that it was usually higher in the afternoon, and when I inserted the thermometer a second time I found it several degrees higher; although each time it remained in the mouth three minutes.

To my mind there are but three ways that a thermometer can be raised while in the mouth, only using means that the patient who is being watched can use. These are pressure on the bulb by using the muscles, friction, and, as I heard of one patient who was thought to be alone doing, quickly drop the end of the thermometer, thereby jarring the mercury from the bulb. I have endeavored to raise the mercury myself by using pressure and friction from the tongue, but the best I can record is normal temperature. I have squeezed the bulb with my fingers until I thought it would break and the mercury remained stationary, but by friction, using the rough material of my clothes, the mercury rose a degree or two, while by a very rapid motion on the cloth, at the same time using much pressure on the bulb, rubbing until my arm was tired from the rapid motion, I was able to record 110 2-5°. I only mention this to show the extreme exertion it required to raise the mercury and yet these patients are said to do it at any time, not on rough cloth, but using smooth mucous membrane.

A degree or two might quite easily be added to the temperature by one skilful in manipulating the thermometer, but to raise the mercury any extent is a question of dispute. Do not misunderstand me as claiming that the temperature was raised wilfully by my patient; but that the temperature was raised on two occasions. If it required so much exertion to raise the mercury of my thermometer to 110 2-5° by friction and pressure, how can we explain the cases of extreme hyperpyrexia, reported by prominent and trustworthy men? I refer to Dr. A. Jacobi, of New York, who reports a case in the transactions of the Association of American Physicians, recording 148°; Dr. J. E. Summers, *Omaha Clinic*, February, '92, of 147°, and Dr. Heber Jones, *Memphis Medical Monthly*, October '91, who reports 157° in this way: The case, a girl of fifteen years, had tonsilitis, was otherwise healthy, would at intervals have paroxysms during which intense heat was manifested by the thermometer, yet the girl said she was chilly. Pulse was never over 120. In recording the temperature Hick's thermometers were used, but these broke at the neck, while in every instance the mercury was at the top, thus suggesting breakage from expan-

sion; Truax & Co., of Chicago, furnished, at special request, a thermometer recording 150°; this also was broken and the mercury stood at the top at least 7° above the 150° mark; so he gives it 157°. A 200° thermometer was ordered but recovery occurred before it arrived.

This case is quoted because it has been explained in a medical journal as caused by hysteria, and the temperature raised by friction, although Dr. Jones states the temperature was taken per rectum and two-thirds of the thermometer was inside, yet in each case the instrument was broken at the neck.

As the case was described to several medical men of prominence before treatment had long been instituted, it is interesting to note the different diagnosis given. One stated the case to be malarial in type, and added with malingering; another physician, a well-known professor, suggested typhoid fever, as a possible cause; several jumped at conclusions when the sores on the labia were mentioned; the presence of pus, either in the liver or pleura, was mentioned, reasoning from the pain in the side, but as the case progressed and the quinia had changed the whole course of the disease it also changed the diagnosis of all who have heard the results.

I might add that a probable explanation as to the existence of the sores would be that they were herpetic, appearing where they did and not on the lips, as is often the case, and the secretions, acting as irritants, caused them to ulcerate.

Insanity.

As well try to describe the hues of the chameleon as to describe the phenomena of insanity. They are as various as the different cases and changing every hour. It is impossible to draw the line between soundness and unsoundness of mind. Eccentricity so strongly marks the conduct of some individuals that actions natural to them would be marks of insanity in others. The best and easiest test to decide the question in any individual case is to inquire whether there has been any strongly marked change of character or departure from the ordinary habits of thinking, feeling and acting without any adequate external cause. In short, a man should be compared with himself, and not with others, to decide whether he is insane or not. If there has been no departure from his ordinary conduct and character he may very safely be declared sane; if there has been a marked change in these respects such a judgment would hardly be safe.—*Massachusetts Medical Journal.*

A few drops of strong ammonia water added to the water in which you wash will greatly facilitate the removal of grease and of blood. About half a teaspoonful to an ordinary basin of water will be the right proportion. Of course, you must use soap as well.

PSYCHICAL MEDICINE.

G. W. TERREY, M.D.

We may consider any of the silent forces called mentality, which we may apprehend and control, as belonging to some of the various classifications of *vis medicatrix natura*. It will suffice at this time to presume a sufficient familiarity with mental impressions as they affect most of the common, every-day phenomena we are witnessing, the action of mind over matter. Nor shall we delay long in weighing the effects of the fanaticism and superstitions of the times.

The processes by which mind itself grows are suggestive of the germinal idea, for mind is distinctively the product of mind. Take the image upon the retina; it is inverted. It would be so impressed upon the inner tablets of the mind, had not knowledge of facts been gained by the infantile inquiry into external impressions of an animal nature only. Unaware of relations and differences, as you sat upon your mother's knee, your hand touching her face by some accidental contraction of the arm, showed you that her chin was not actually at the superio-frontal angle of the head as it appeared to the eye. There and then was begun your practical life, and you have been following its wondrous developments to the present, dispelling illusions of mind and heart, controlling the flights of fancy, subduing the outbursts of passion, shattering idols, conserving the truths of conscience, and, upon the grand photo-scope of intellection, rearranging the erect images of experience and knowledge. It was then, having gained the power of observation, that consciousness and will began to exert control over the body and that the wonderful coordination of intentional and automatic exertion was brought about.

What is the limit of search for absent or perverted function? It can be prosecuted to the utmost depths, anywhere and everywhere. About the time institutes for the training of weak-minded children were first thought of in this country a young man went to Europe to acquaint himself with their workings. He returned and, starting a school, advertised for helpless and idiotic children, of even the lowest possible development.

A boy five years of age, who had never spoken or walked, had never chewed any hard substance or given a look of intelligence or of recognition, was brought to him. He lay on the floor a mass of flesh, without even ability to turn himself over. The teacher made effort after effort, fruitlessly, to get the slightest recognition from his eye, or to produce the slightest volitional act. Unwilling, however, to yield, he had the little boy brought daily to his room, and he lay down beside him for half an hour, hoping that some favorable indication might occur. To improve the time he read aloud.

One day, at the end of six months, he was un-

usually weary and did not read. He soon found that the child was uneasy and was trying to move itself a little, as if to turn towards him. The thought flashed upon his mind, "It misses the sound of my voice." He turned himself closely to it, brought his mouth near the child's hand, and after repeated efforts the little fellow succeeded in placing his finger upon the teacher's lips, as if to say, "Make that sound again." This was the beginning, and from that little spark of co-ordination of mind-essence and the resulting train of activity that lay within that first finger touch there was fanned into being the power to think, walk, speak and to receive an education.

The child's sense of hearing was the key that unlocked its other faculties, and opened up the way to reach and develop its other attributes. Surely this ought to encourage physicians to be patient and original in practical dealings with the human race.

Our sense of hearing takes cognizance of sounds only after a long period of educational training through which was first taught the sifting of vibrations and then how to weigh, measure and translate them, that they might be assimilated. If you were to be deprived of the power of hearing of one ear today it would take months to learn the trick of locating the distance and direction of sounds with but the impressions from one ear.

And so we have the constant activity of all the special senses looking after the changes and constancies of the intellect and contributing to that aggregation of them all which is known as the mind. It is thus that we observe our duties calling upon us to meet psychical matters with psychical measures. When we see the balances of the intellection correcting and sustaining those of the physical realm in that grand co-ordination called healthfulness we readily notice that we are impressional beings, but it is when we study departures from balanced principles in sickness, or weakness or fatigues, that an influence upon one center of impression may best be seen reflected by other centers. How may we group, or mingle, or arrange, our experience so as to alter or control false impressions? How can we remove or substitute actional wrongs of the economy by functional rectitudes, or, in given cases, do the reverse, is the question. This does not contemplate animal magnetism or hypnotic influence. They are questions, as yet, of the earth, earthy, hardly sufficiently developed for scientific application; but there are so many ways in which an intelligent and tactful physician can produce material effects upon a patient's condition or disorder by putting the patient's own feelings, inclinations and faculties into operation, that he is not excusable if he neglect to do so.

Recently a pronounced case of catalepsy was suddenly brought to a favorable close by the doctor's sorrowful announcement that he was forced to adopt the last remedy for such cases, one that would possibly cure the patient but probably end his sufferings in five minutes. When the time was up and the doctor was back, ready for business, the patient was up, too, sitting on a chair. A violent and protracted case of hysterial convulsions, which had lasted for three days, growing steadily worse, and which had refused response to all the remedies three experienced physicians had been trying, at once yielded to two or three thoroughly-applied showers of ice water, used with the suggested possibility that the outcome might be announced in the papers later on as a drowning accident.

Delirium has its openings and histories. A patient had lain for some time in one of those semi-conscious states between the real and the unreal as the typhoid scorched and pounded the brain. He partly aroused to his situation and was quiet and restful, but he was helpless in the grasp of his disordered imaginations—close to the border land of doubt and dread and delusions.

The doctor, who was an active, fussy little fellow, just starting out to do good, came into the sick room one morning with that unannounced, cat-like quietness that holds up its fateful finger and commands silence in the spectral gruesomeness that can be cut with scissors, and fills an apartment with a chilliness that will make dry wrinkles in a grave cloth. And with him, as its lone and anxious custodian, he brought his advertisement scheme hurry. There was electricity in his centrifugal locks, business in his eye, mittens on his hands and snow flakes on his woolly overcoat. The doctor was real as to fact; but as he broke into the room as described, he was quite naturally mistaken for old Santa Claus or the Devil. The sick man proceeded to do just what a happier and more nimble man would do; he jumped out of bed and made a break for the kitchen to his wife for protection. This, in conclusion, we will state, he received at her kindly hands, and, later on, what we trust amounted to the same thing, a new medical adviser, for he recovered.

We have no desire to perpetrate upon you the old operation upon the troublesome patient at this time, only to refer to the case in its psychical phase. This old bread-pill trick, resulting in actual catharsis, operated, of course purely intellectually, through the good old lady's mind. And as with the condemned criminal, who gracefully and economically bled to death as he lay blindfolded, feeling a stream of water dribble from his wrist, down his hand to the basin that he supposed was catching his life blood. But these are not the ideal manners in which to manifest *psychosis medicini*, neither will it be necessary to present to these intelligent readers some of the other forms of specifications. We are living under the sway of asepsis in its various literal aspects and no physician and surgeon dares to ignore his responsibility. All that we will find

needful, in the sense in which we are viewing our subject, is to press on and adopt to the fullest, aseptic deportment and conduct in the sick room. Don't say to a suffering woman, as I heard said within a year, "It's your guts, Madam, it's your guts." Call things by their common names as much as possible but never be vulgar and low, and remember that to the people, mannerism, for the sake of showing contempt for conservative terms, is just as much cant as the use of ambiguous and extravagant words. Let your personal bearing towards friends, nurses and patients be such as shall invite as well as compel respect for yourself and profession while it is doing the same grateful office for your instructions and prescriptions. Dignity without mannerism and ostentation begets an environment for the physician that reflects a converging mirror of hopefulness and contentment into the minds of the sick one, your patient, and the friends and nurse, your bondsmen, that will go far to bring forth a mutual blessing.

It seems that our conclusion implies that if we have impressed, by our own personelle, a spirit of clean, pure order, neatness and kindness, they in turn shall pass on to the benefit of our patients as addenda representing the proverbial two-thirds valuation unctuously appropriated by the nurse, and given him without a doubt by the acquiescent public, while, at the same time, we will reap our sure reward in the consciousness of having merited, and received, our own in the way of largely increased numbers of what the nurse has left—the other one-third.

The Other Kidney in Nephrectomy.

Edebohls (*Annals of Surgery*, April, 1898) states that the presence of a second kidney in cases of contemplated nephrectomy may be determined by most of these aids, examination of the urine, palpation, cystoscopy, catheterisation of the ureters, skiagraphy, and the fluoroscope.

None of these aids, however, can in every case give satisfactory information as to the exact condition of the other organs. In cases of pyuria and tuberculosis of vesical or unilateral renal origin catheterisation of the ureters involves the risk of infection of a previously healthy ureterer and kidney, and should therefore be avoided.

When not absolutely certain of the presence and exact condition of the other kidney the surgeon, it is held, should perform an exploratory incision in the lumbar region, which if properly performed according to modern methods may be regarded as a safe and expeditious procedure. The author describes in detail his own method of making such exploration, and of exposing and closely examining the second kidney.

Communication.

CAUSES AND RECENT TREATMENT OF NEURASTHENIA.

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Neurasthenia, or *nervous exhaustion*, the so-called "American disease," is not modern, but belongs to that category which the man of wisdom had in mind when he remarked, "There is no new thing under the sun." It has afflicted the human race from the beginning of history.

As I glance over the biographical records of the past in search of evidence confirmatory of Arndt's assertion that neurasthenia has been recognized for thousands of years, I find the Greek and Sanscrit classics replete with instances of emotional exhaustion; melancholia from disappointment in love; piqued women like Lesbian Sappho, who flung themselves from Leucadian capes; sexual neurasthenics and perverts; with few overworked classes like the scholastikoi, or befuddled book-worms, that figure in the "Facetiæ" of Hiercoles. The typical neurasthenic figure in Semitic history is Job, with his malassimilation, his auto-infection, and his cell-exhaustion from mental strain. And the Lord, his Physician gave him the advice we are so ready to extend to the modern neurasthenic, "*Gird up thy loins like a man.*"

Perhaps the most marked case of neurasthenia in antiquity is that of Mæcenas, who certainly affords a conspicuous instance of nervous prostration. According to Seneca (de Provid., III: 9), he was an *insomniac;* Horace (Odes, II:17) pictures him as a *hypochondriac*, and Pliny (VII: 51) as *troubled with a continual restlessness.* In fact, he exhibited all the stigmata of degeneration, including what seems to be masochismus, inasmuch as he dressed like a woman (Seneca Epistles, 114,) and was noted for his effeminacy. The accounts of his life indicate that his neurasthenia was the result of the same causes that operate today to produce the disease.

Although thus not an American affection in its origin, neurasthenia is peculiarly American in its distribution—the rush and tear and overwork, the emotional excitement connected with failure and success, the slavery to social obligations and pleasures, so characteristic of American women, sufficiently accounting for its widespread existence in this country. American fashionable and business life is a continuous nerve-storm. Nor, again, is it peculiarly the rich man's disease, for it afflicts as frequently the poorer classes, on whom fall so heavily the burdens incident to battle with the world. I have been surprised at its prevalence among the resident population of this state, especially as a sequel of the grip or influenza, of typhoid and of the zymotic diseases generally (toxic neurasthenia), and in its climac-

teric phase with the native women, broken down by a lifelong domestic service, or by excessive child-bearing and lactation.

The symptoms are generally misunderstood, and the condition is improperly treated, or regarded with suspicion, indifference, or ridicule. It is not my purpose to dwell upon the symptoms of neurasthenia—the paresthesias and hyperesthesias; the asthenopia and atonic voice; the deficient thirst (all neurasthenics are hydrophobiacs, with desiccated nerves); the constipation and fermentative dyspepsia, with their accompanying intoxications; the oxaluria and uricacidemia; the vertigos and helmet headaches; the loss of vaso-motor tone; the sensitiveness to noises, vibrations, and jars incident to existence in a land of electric and steam cars, of jostling crowds, clanging factories, and crowded streets and stores; the failure of sexual power and pleasure in the sexual act; the intractable sleeplessness; the agonizing tension as though under some frightful brain pressure; the sickening oppression about the precordia (*præcor dialangst*); the morbid fears, especially monophobia (fear of solitude) and anthropophobia (fear of society); the dread of responsibility; the indecision and *folie du doute;* the fixed conviction of incompetence and uselessness; and the delusional mental state, with its imperative conceptions. I need hardly picture the climax of this condition, at which faith and hope and love are, as Milton said, *turned to Hell;* at which Christian principle at last relaxes its hold on the tortured soul, and the sufferer of woes indescribable buries his agony in a self-sought grave.

There is a distinct line of demarkation between this state and insanity, in that it is amenable to curative treatment. The neurasthenic, if properly dealt with, may, in the great majority of cases, be saved, restored to comparative health, and made a useful and happy member of society again.

Neurasthenia is a depraved state of the nervous system, caused by mal-nutrition of the nerve elements, through the abnormal disassimilation of the complex phosphorus-bearing nerve substances.

A nerve cell is a cell-body under control of a nucleus and provided with branches or processes, the principal one of which, regarded as the true outgrowth of the cell, is called a *neuron.* It is the seat of ceaseless metabolic change, conditioning the replenishment of the contained phosphorus-bearing substances that represent so much stored or potential nerve energy, and that are transformed and consumed in the evolution of such energy.

Physiologists believe that the passage of nerve impulses after the osmotic powers of the cell wall towards the surrounding plasma, and that by endosmosis and exosmosis the nutritive exchange takes place. The dense network of capillaries environing the cells indicates that they are the centers of this nutritive metabolism. In neurasthenia, not only are the nutritive properties of the cell-encircling plasma altered by auto-intoxication, the poison of infectious diseases, or by alcoholism, cocainism, morphinism, etc., but in some instances, through the action of the same causes, the cells appear measurably to have lost the power to appropriate what limited amount of nourishment may be present. In either case, the cell-bodies are more or less starved, and their energy-projecting powers correspondingly impaired.

No doubt the commonest cause of this cell-exhaustion and consequent impoverishment of nerve force—the cause of the cause of neurasthenia—is the intemperate exercise of the intellectual faculties and the excessive indulgence of the emotions and passions. I believe emotional unrest to be a far more prolific cause than labor disassociated from irritation and anxiety. The greater number of neurasthenics are unmarried persons, the operative causes in single men being the excitements connected with sexual and alcoholic excesses and with gambling; in single women, the harassing struggle for bread.

Sexual abstinence is in itself a predisposing cause of neurasthenia; but sexual excesses and irregularities are an every-day active cause. Sexual intercourse, naturally and temperately used, is a nerve sedative and tonic; intemperately or unnaturally indulged in, a nerve irritant and drain. It is not the passage of semen nor the secretion of mucous fluid by the glands of Bartholini that does the mischief, but the repeated orgasm or reflex act of ejaculation, which, like an epileptic convulsion, implies a nerve shock, and which exhausts the protoplasm and shrinks the nuclei of the cells as do electric discharges through them.

In some ill-understood manner, all such abuses produce cell-degenerating toxins not apparent to the microscope or appreciable by chemical analysis. Whatever, by prolonged or excessive action, enfeebles the system, must exhaust the cell-bodies faster than they can reproduce themselves. A sufficient amount of nutritive material is not floated to the centers of abnormal cell-activity to compensate for the extra demand made upon them, nor are the waste products removed as speedily as is consistent with health and safety. And what are the results? Malnutrition and auto-intoxication.

When we exercise our muscles merely for the sake of pleasure, the amusement is called play. When we similarly exercise eye and ear, the amusement is known as esthetic feeling. The first is active; the second, passive. In each case pleasure accompanies the activity of well-nourished and underworked organs. On this principle human health and happiness hang—well-nourished and underworked cells — a normal

amount of activity in the terminal nerve organs of the cerebro-spinal nervous system.

But let certain nerves be called upon to perform an excess of work, and painful feeling results. Note the effect of dynamo-generated electric light upon the eye. Those who use the incandescent lamps for reading may refer the massive pain and feeling of irritation in the eyeball that follows an evening's work, to the imperceptible unsteadiness in the white-hot filament of carbon. This light really pulsates—rises and falls with the passage of each commutator bar under the brushes in the dynamo. If the engine be slowed down, the fluctuations become visible; but whether they are consciously appreciated or not, the nerve fibers in the retina must certainly respond, and the eyes become wearied; because, although the optic fibers are renewed seventeen times a second in order that we may learn so much and so unremittingly of the world about us, the destructive metamorphosis here is excess of repair.

In like manner, in all normal cerebral and nervous activity, we have constantly induced partial fatigues, followed by partial stimulations. In overuse, the reparative processes are distanced by destructive metamorphosis; nutritive regeneration is unable fully to restore the wasted substance of the nerve-organs; and where the hours of sleep are invaded to meet the demands of a growing business or an imperious ambition, these nerve-organs rapidly lose the power of regeneration and become incapacitated for the fulfilment of their functions. Hence the morbid impulse to ingest more food than can be oxidized; hence the phosphaturia and uricacidemia, the indigestion, and the neurasthenic liver.

I hold that these are the effects of nerve starvation, not the origin of it; and here the mistake is made by many practitioners who treat merely the symptoms, forgetful to remove the causes that give rise to the symptoms. The nerve exhaustion primarily acts to produce the oxaluria, uricacidemia, gastric and intestinal dyspepsia, prostatic neuroses, irritable and depressing sexual functions, muscular insufficiencies of the eyes and general asthenopia, precordial pain, insomnia, and cardiac breakdown; and these results react as causes to perpetuate the nerve exhaustion. In neurasthenia effects immediately assume the rôle of causes, and hence the danger of error in treating the disease.

You ask whether the microscope has revealed any deviation from the normal in cells that are in a condition of pathologic fatigue. We all know from autopsies the toxic effects of infectious and acute inflammatory diseases in shrinking the nuclei and curtailing the processes of cephalic and corneal cells. We also know from experiments made on the lower animals that at the end of a day of active toil the nuclei appear small and shrunken, but after a night of rest the cells are turgid with large, well rounded nuclei; Hence we certainly are justified in the inference that the cell-bodies of neurasthenics exhibit peculiar signs of defective nutrition. Says Gray: "The same cell that can become organically altered can become functionally altered; or the pathologic alteration which we call general paresis, poliomyelitis, or peripheral neuritis, may have its functional analogue in cerebral, spinal or peripheral neurasthenia, with this difference, that the cell which is originally altered in its molecular constitution cannot be made to return to the normal so readily as the functionally impaired cell."

Dr. Ira van Gieson, the State pathologist of New York, writes, that his opinion coincides with my own, viz., that there is some measure of toxicity degeneration in the nerve cells of neurasthenics. But the demonstration of such changes must involve very great difficulties, as well on account of the enormous amount of territory in the cortex to be examined, as by reason of the difficulty of obtaining neurasthenic material for autopsy purposes. As yet no work has been done along the new lines of research in the application of the methods and principles of modern cellular biology to the study of neurasthenia.

However, treatment on the theory of cell-exhaustion and the practicability of cell-feeding has been the most successful. I believe that if the rest be made long enough, the food stimulating enough, the sleep regular, the change of employment judicious, and all worry removed, most cases of neurasthenia may be greatly improved, if not entirely cured. The trend of this treatment is wholly in the line of nutrition and direct stimulation of the spinal cord.

Chemistry has demonstrated the presence of a phosphorus-bearing substance in the nerve cells. This is known as lecithin (lecithos, literally yolk of an egg), a hygroscopic white, waxy solid, composed of carbon hydrogen, nitrogen, phosphorus, and oxygen. It is a constituent of every cell in our bodies, but especially characteristic of those that make up brain and nerve substance. Chemically, lecithin is a glycero-phosphate of neurin — neurin constituting the albuminous basis of nerve tissue and occurring in the gray granular vesicular nervous matter and in the white fibrous nervous matter. Lecithin is found also in pus, in the white corpuscles, and in semen. In combination with cerebrin, it constitutes protagon, the principal form in which it is met with in the brain.

Life depends on the presence of healthy lecithin. Neurasthenia is due to a diminished amount or reduced quality of this glycero-phosphate. Hence the philosophy of administering a glycero-phosphate of lime in conditions characterized by defective nutrition of nerve and brain cells, which means a diminution of phosphorus

in the cerebral and nervous matter. Attention was called to the value of glycero-phosphate of lime in the treatment of neurasthenia by Dr. Albert Robin, before the "Academie de Medicine" of Paris, as recently as 1894, and the French preparation began to be used by a few American physicians in 1895. Glycero-phosphate of lime has been found rapidly to restore to the system the phosphorus eliminated in excess through the urine, and was proved by Robin to diminish the excretion of incompletely oxidized phosphorus there present, and indicative of pathologic waste. It supplies the exhausted and enervated cells with phosphorus in a state of combination essentially the same as that naturally contained in them — an organic or physiologic phosphorus, as it were—readily assimilable, and thus differing from the mineral phosphorus of the popular syrups of the hypophosphites and the ordinary unassimilable phosphate of lime.

Its administration at once stimulates nutrition, promoting metabolism, and hastening the rapid tissue interchange which constitutes health. In sexual neurasthenia and the impotence of old age, the effect of the glycero-phosphate is especially marked. Sexual energy and the pleasure connected with the sexual act are quickly restored. I have notes of cases in which persons upwards of seventy years of age regained under its influence the full powers of middle life. Treatment of neurasthenia with glycero-phosphate of lime is the treatment that ignores reflexes and directly addresses the seat of the disease.

The ideas of treatment that are to be found in the standard text-books, have too often proved unsatisfactory with me. I administer five grains of the glycero-phosphate of lime in capsules with each meal, and continue this treatment unremittingly for a year or until cure is effected, not expecting results that are apparent and gratifying to the patient until after three or four weeks of medication. There are cases characterized by marked physical depression in which I prefer the wine of the glycero-phosphate of lime — a sherry-glassful before meals. Its action is immediate, and the slight stimulation due to the alcohol seems to be maintained by the absorption of the glycero-phosphate with the food.

With the glycero-phosphate of lime at meal time, I combine a fortieth or fiftieth of a grain of strychnia, to promote the nutrition of the cord; and this I continue for a month, then drop it for a week or two, and resume for another month. In connection with this nerve feeding, I seek to accelerate, through the several channels of exit, the elimination of waste products and toxins. At every relapse I give calomel; during the treatment cathartic mineral waters before breakfast, Saratoga, Empire, or Hathborn, or a dessert-spoonful of Carlsbad *sprudel salz* in a cup of hot water—either in sufficient quantity to produce a laxative and not a daily cathartic effect. I insist on the drinking of plenty of water, hot or cold, between meals, to keep the kidneys flushed, Vichy, if obtainable, preferred. Stimulate the skin with a daily bath and rub-down, and where the patient can endure the shock, the cold douche to the spine on rising. Keep the mind interested in something. Physicians are finding out that the occupation cure is preferable to the rest cure, which is responsible for an overproduction of confirmed invalids.

Dr. Skene's latest conclusion is to the effect that most neurasthenic women are either disappointed spinsters or spoiled wives who have been improperly treated—or rather crossed—for trivial disorders. For these he recommends the exercise cure, pre-eminently dancing and horseback riding, not the bicycle. And yet the bicycle has been recommended by Hammond, and is, as we all know, a most useful adjuvant in the treatment of nervous disease.

Where insomnia persists, sleep must be induced by artificial means. This is of supreme importance, for in normal sleep the changes throughout the nervous system are recuperative, and loss of sleep is fraught with greater damage to nerve substance than starvation through overwork or underfeeding. It is through physiologic sleep, where there is no opportunity for nervous discharge, that the system attains its highest degree of efficiency, and becomes possessed of an unusual quantity of potential energy, which physicists ingeniously define as capacity for performing work.

Some neurologists contend that it is better for the patient to lie awake night after night than to resort to hypnotics, but this is not true. If sleep be induced by chloral-amid, or trional, there is no reaction, and the tendency to drowsiness—despite a wakeful day—persists the second and even the third night; so that it is seldom necessary to administer either drug two evenings in succession. It is perfectly safe to give thirty grains of trional (in hot beef tea), and in most cases this will insure eight to ten hours of refreshing slumber, and the second night, without trional, sleep will be deeper than during the first. In desperate cases, where the patient wakes after two or three hours, have an additional ten-grain powder ready to place on his tongue. In milder cases, the tincture of passiflora incarnata (Daniel's) in teaspoonful doses at bedtime insures rest.

Where all drugs fail, hypnotism will succeed, and the current of the disease may be changed by post-hypnotic suggestion.

The psychical treatment consists in securing the confidence of the patient and making him believe that he is curable—that there is a time ahead when he will be entirely well again; but that he must have faith and not be discouraged at the chain of relapses which mark the course of

the disease. When he gains a higher plane, he should be instructed to obey strictly the laws of work and play and diet that he has discovered to be good government for him.

If the case be one of traumatic neurasthenia, commonly called "railroad spine," with indisposition, sometimes inability, to use mind or muscles, it is our duty to discourage litigation. Worry thereabout, brooding over trouble, transforms the neuroses into a cortex habit, and the patient may become an invalid for life. The longer the functional trouble lasts, the less likelihood is there of recovery. Litigation aggravates it, and thus through the psychical effect is more injurious than the trauma itself.

If anything is to be added to this treatment it is exercise within the limits of fatigue, any kind of riding or rowing preferred to walking; fresh air at an altitude not exceeding two thousand feet; a nutritious and easily digested diet, in which phosphorus-bearing grains play an important part, and red wines rich in phosphate of iron are judiciously used; and finally, the most conscientious observance of the old Greek law—*meden agan*, or nothing too much.

A Case of Urticaria of the Pharynx Producing Grave Edema of Glottis.

John Madison Taylor, M.D., reports the following:

The patient had dined with a few friends and was afterwards asked to sing. On attempting to comply, she suddenly felt unable to do so, for no well defined reason. The vague feeling of distress steadily progressed and was described as an increasing discomfort confined chiefly to the throat, but felt elsewhere pretty generally, and finally grew so great as to lead the patient to beg to be escorted to her home. During the short walk of one hundred yards, great weakness was experienced, and a dreadful sensation of impending death, to so great a degree as to cause her to sink down, prostrated physically, a few yards from her door, whence she was carried to her bedroom in what seemed to be a dying condition.

I found a girl entirely composed in mind, but scarcely able to speak, suffering from what she described in whispers as a closing up of the throat, which, if not soon relieved, must inevitably choke her completely; the face was livid and cyanotic, there was gasping and throwing back of the head, a weak, fluttering pulse, but complete mental clarity, which aided me unspeakably in my hasty efforts to learn the symptoms and apply remedies.

Not until ten minutes or so had elapsed did the urticaria reveal itself by appearing on the skin, and then the condition spread rapidly over almost the entire body, causing the characteristic intense itching and burning with redness and wheals. This continued for several hours, slowly subsiding in the next few days, and then occasionally recurring. My efforts were naturally directed to relieve the dyspnea. Suffice it to say, I used counter-irritation in the shape of heat to the feet, ice to the neck, and a spray of antipyrin and cocain to the pharynx, which gave prompt comfort; also hypodermics of strychnin and atropin; later pilocarpin, and, internally, ammonia and stimulants.—*Medicine.*

The Privilege of Prescriptions.

So far as the law of Australia can settle the question it has been decided that, while a physician or surgeon is forbidden to divulge information as to his patients, the same law does not apply to chemists, and a dispenser may be compelled to produce his prescription book in the witness-box. This decision is just what might be expected from that farrago of absurdities called the law. The physician who prescribes may be sent to jail if he divulges professional secrets, while the chemist who turns his prescriptions into medicine may be sent to jail if he does not do so.—*Med. Press.*

Lycoctonin.

Marchetti (*Lo Sperimentale*, An. 51, f. 4) gives an account of his experiments with this alkaloid, derived of aconitum lycoctonum and presenting itself as of a yellowish powder, slightly soluble in ordinary water, but easily in water acidulated with acetic or tartaric acid. The minimum lethal dose in the frog is about 78 cg. per kilog. Poisoning is shown by paresis or general paralysis. In warm-blooded animals the results were mostly negative except in very large doses. Lycoctonin possesses, in addition to a paralytic action on the central nervous system, a peripheral action on the striated muscle fiber. On the heart the effect is chiefly seen in excitation of the intracardiac "apparatus of arrest," together with a rather weak exciting action on the myocardium; it is not a very active cardiac poison. At present it does not appear that lycoctonin could be employed advantageously in human therapeutics, but probably this is not the most active principle of the plant.—*Brit. Med. Jour.*

Mecurial stomatitis is in many instances due to a dirty condition of the mouth, and this, frequently, among those who ought to know better. If you will order your patient to clean his teeth at least every three hours, and oftener if he should eat anything between times, he will be far less liable to the pain and annoyance of stomatitis than if this simple rule is not observed. A soft tooth brush and a mildly alkaline lotion should be used.

Contemporary Review.

Immunization Against Serpent Venom.[1]

The study of serpent poisons is particularly suitable for increasing the precision of our knowledge with regard to toxins, both on account of the direct analogy which the one presents to the other, and also because of the greater rapidity and precision of their action, which allow the physiologist to make infinite variations in his experiments without exposing him to sources of fallacy surrounding the investigation of toxins arising from different cultures, or the employment of animals whose individual resistance in respect of certain poisons is very variable. Experiments published since 1893 has established:

1. That the poisons of all venomous animals in different parts of the world present very direct analogies with each other, and that an animal artificially immunized against a very active poison (*e. g.*, that of the cobra or the *Bothrops canceolatus*) is also refractory to all less active poisons.

2. That the serum of animals protected against large doses of very active poisons possesses protective and curative properties so intense that it is capable of conferring in a few minutes on fresh animals absolute insensibility to all these poisons.

3. That the amount of curative serum that an animal (such as the guinea-pig, the rabbit, and the dog) should receive, when inoculated with a venom, is inversely proportional to its weight, and directly proportional to the amount of venom received. For example, a cubic centimeter and a half of the author's serum suffices to immunize in a few minutes a rabbit weighing two kilograms against a dose fatal by intravenous injection in fifteen minutes; while to protect a dog weighing ten kilograms against a dose that proves fatal in three or four hours when administered subcutaneously, the same dose of serum will be sufficient.

After remarking that the value of serum treatment against venomous bites is now too well established to need argument, the author states that, in conjunction with M. Guérin and M. Wehrmann, he has conducted at the Pasteur Institute of Lille a series of experiments to determine the part played respectively by the nervous system, the leucocytes, and the various fluids of the organisms in the production of artificial immunity against venoms. He considers the researches of Fraser and Phisalix upon the preventive potency of bile, glycocholate of sodium, of cholesterin, and also of the tyrosin of the carrot or dahlia tubers against serpent venom, comparing them with the effect of antitetanic serum, the serum of dogs inoculated against hydrophobia, certain normal serums of the horse and dog, and even, in some cases, normal beef bouillon freshly prepared. An investigation was made whether in these cases a true immunity of greater or less duration was afforded, or simply a cellular resistance, more or less transitory and devoid of any specific character.

In respect of bile, M. Calmette found that this secretion undoubtedly possessed, as asserted by Fraser, the property of destroying the venom *in vitro*, provided that doses very near the fatal limit were employed. All the venoms, as well as certain microbic toxins, that of tetanus, for instance, when left in contact for forty-eight hours with a certain quantity of fresh bile, lost their toxicity. Heating the bile to a point short of 248° F. enfeebled but did not destroy its toxicity. But when the bile was injected forty-eight hours before the venom, even in doses relatively large (*e. g.*, one and a half to two cubic centimeters of ox bile for a guinea-pig weighing five hundred grames) no preventive action was observable, neither was any therapeutic effect noticeable when it was injected after the venom, thus clearly showing that it was the admixture only of these substances which was effective in destroying toxicity.

Particular attention was called to the necessity for employing on the check animals doses certainly fatal in two or three hours; for where doses only fatal in five or six hours were employed, about four out of ten guinea-pigs were found to recover from the illness produced without the aid of any preventive injection. Injection of the venom into the gall-bladder of rabbits caused death after a protracted interval, probably because the venom was absorbed before the bile had had time to act.

Cholesterin (Merck) dissolved in ether was found to possess no real protective power, though it retarded death for from one to five days when injected from two to four hours before a dose of venom ordinarily fatal in three or four hours. If injected forty-eight hours previously, it was without effect.

Similar effects to these, it was found, were producible by different substances (*e. g.*, fresh normal bouillon, certain normal, antietanic, or antirable serums, etc.). But this could not be regarded as indicating any real specificity; it should rather be regarded as a transitory stimulation of the leucocytes whose mission was to seize and hold the venom. The important rôle of the leucocytes was shown by the facts that the injection of venom was always followed by an increase of leucocytosis, and that a dose of venom slightly diluted with fresh leucocytic exudation invariably retarded the intoxication.

In regard to the nervous system, emulsions of neither rabbits' nor serpents' brains exercised the least antitoxic power either *in vitro* or pro-

1 M. CALMETTE in *Presse Medicale*, April 16.

tectively. Experiments were also made to see if the injection of certain substances (*e. g.*, curare, chloral, strychnin sulphate, etc.) known to act energetically upon the cerebrum, the cerebellum, and the spinal cord, would destroy the passive immunity of rabbits produced by antivenomous serum, and it was found that they did not. M. Calmette concludes as follows:

1. The antitoxic action of bile, cholesterin, etc., as well as that of certain normal, antitetanic, antirabic, and other serums, cannot be regarded as a true antitoxic—*i. e.*, specific—action in regard to venom. It is simply a means of cellular stimulation whose effects are very transitory, and which can be produced by very different substances.

2. After the injection of antivenomous serum, the serum manifests its protective action, notwithstanding that the resistance of the nervous elements may have been diminished by the injection of various poisons which act upon them.

Partial Resection of the Eyeball.[2]

The author reports a method which he considers fulfills the desideratum—viz., immunity from local and sympathetic inflammation, with satisfactory movement of the artificial eye. The strategic parts of the eyeball, he says, are the ciliary region in front and the sclero-optic junction behind. The principal traumatism and sepsis leading to loss of function are in the former location, and the conveyance of trouble, sympathetic or septic, takes place through the latter.

With these parts, the retina, and the vitreous removed, the remaining parts of the eyeball, he holds, should be non-irritating and harmless, and serve with the attached muscles and motor nerves as a movable pad upon which the artificial eye can rest. He thus describes his operation. The instruments required are speculum, sharp-pointed scissors, catch forceps, and curet.

Complete Anesthesia.—With speculum in place, the scissors are inserted about twenty-five millimeters [2.5 mm. ?] behind the sclerocornea junction, sufficient to include the ciliary body, and complete section made, thus removing the whole front of the eyeball. The vitreous is then evacuated and the retina removed with the curet; the hemorrhage here is usually profuse, but easily controlled by hot water and pressure. The speculum is then inserted within the ball, and thus made to hold both eyelids and edges of the sclerotic opening.

The point of entrance of the optic nerve is then grasped with toothed forceps and the scissors are inserted as close to the nerve as possible, to avoid wounding the ciliary arteries, and a circular incision is made in sclerotic, freeing the optic nerve, which is then drawn forward and severed about twenty-five millimeters [2.5 mm. ?] from the sclerotic junction, thus removing a section of the optic nerve. A laryngeal head-mirror is useful here to concentrate the light within the sclerotic cavity.

A piece of gauze is inserted and the sclerotic and conjunctiva are closed vertically in order to give normal tension to the internal and external recti, as lateral motion is of greater importance than vertical. The after-treatment is simple, the gauze may be removed in twenty-four hours. The cavity fills with blood, which becomes partly organized, thus preventing complete collapse of the sclerotic. An artificial eye may be inserted within two weeks.

The resulting advantages alleged are greater prominence of artificial eye, perfect movement between thirty-five degrees laterally and twenty vertically, also diagonal movement, and retention of the normal secretion from the lacrymal ducts, etc.

Diseases of Uterine Appendages Simulating Appendicitis.

The patient, a young married woman, was referred to him as suffering from a typical case of appendicitis; her history showed that she had suffered from three or four similar attacks, a diagnosis of appendicitis having been made each time by the physician in charge. Pain in the abdomen, the typical McBurney point of tenderness, elevation of temperature, vomiting, all the signs were present.

Examining her under ether before operating, a mass was discovered on the right side which could be rolled between the fingers; the uterus was normal in size and perfectly movable. On the left side nothing of pathologic importance was found. The tumor was low down in the pelvis.

The patient had never given birth to a child, and had no history of abortion, gonorrhea, or of any other infective trouble of the genitals. Upon making a median incision, the uterus was found full of adhesions, but extending outward and falling down behind the broad ligaments were found two tumors; that of the left side was a small cyst, while on the right was a ruptured tubo-ovarian abscess; the ovary itself was completely destroyed and was removed piecemeal.

In two other cases operated upon prior to this, and where a diagnosis of appendicitis had likewise been made, similar conditions were found; showing that, while diagnosis may be simple in the male, it is quite the reverse in the female; as the appendix descends into the pelvic cavity and simulates in every way disease of the uterine appendages, while on the other hand diseases of the uterine appendages may often simulate disease of the veriform appendix.

The Surgery of Modern Warfare.

The war that has just begun between the

2 Dr. Ernest Hall in *Annals of Surgery.* (*New York Med. Jour.*)

3 Dr. Louis Frank in *Medicine.*

4 Editorial in *New York Medical Journal.*

United States and Spain may be expected, we presume, to furnish some much needed data concerning any modifications of surgical procedures that may be rendered necessary by the changes in arms that have taken place since the occurrence of any great war, and by the use of vessels of war such as have never before been engaged in squadron conflicts. This expectation may not be fully realized; indeed, we hope it will not, for we are still unwilling to believe that the contest we have now entered upon will prove to be of any great duration.

Not a little has already been published concerning the effects of the small-calibre bullet that has recently come into use. Most of what has been said of them, however, has been little better than speculative. By far the most important contribution to our knowledge of what the small-calibre bullet is capable of doing, in our opinion, has been made by Dr. Charles E. Woodruff, of the United States army, in his article on "The Causes of the Explosive Effect of Modern Small-calibre Bullets," published in our issue for April 30th. So graphic is Dr. Woodruff's description of the unsatisfactory state of opinion as to the behavior of the bullet, up to the time of his experiments, that we here reproduce the substance of it. Writers first affirmed, he says, that the bullet went through the tissues with great velocity and made only a small hole. Then there came reports of frightful destruction of tissue, as if the bullet had exploded. Some reconciled these conflicting accounts by asserting that it was at short range only that the explosive effects were produced, while others stated that they occurred at both short and long range, but not in the intermediate ranges. But all this was upset by the fact that the bullet would sometimes pass through a man with so little injury to his tissues that he would keep on fighting, not even knowing he was hurt, while right at his side a comrade would be struck down and instantly killed.

The satisfactory explanation of this astonishing diversity of effect which Dr. Woodruff founds on his experiments and on his reasoning from observations made by some other competent observers can be grasped only by reading his whole article carefully. An intensely interesting point in it is the demonstration that the ruin sometimes wrought by the missile is often due to the explosion, so to speak, of the liquid contents of a hollow organ through which it passes It is not the bullet that explodes, as some have supposed, but something through which it travels at an instant when that something—particularly liquid contained in a cavity—is in a state to catch up the vibrations of the bullet. One practical outcome of this explanation is to emphasize the old injunction that a soldier should always go into battle with his bladder empty, but for a different reason from the one given by the surgeons of bygone times.

Turning to naval warfare, we have thus far, in addition to the small experience acquired in the war between Japan and China, nothing but the recent engagement between the American and Spanish fleets in Manila Bay. So far as that goes, it is of little if any use in putting naval surgery in a new light. While the enemy suffered severely, our own losses amounted to nothing. We do not know how many of the wounded Spaniards went down with their ships, and we know as yet nothing of the nature of the injuries sustained by those of the Spanish force that took refuge in the city of Manila. The general expectation is that a squadron encounter is soon to take place in open waters. If that happens, something more may be learned from the surgical point of view.

Leprosy as a Telluric Disease.[5]

Leprosy is one of the most interesting of endemic diseases, especially as, notwithstanding the fact that it was recognized in ancient days, there is still much that is obscure as to its pathogenesis and endemicity. Is it ever conveyed by direct or indirect communication between the sick and the healthy, or does the disease inhere in localities rather than in persons? The two suppositions are not necessarily mutually exclusive, but it is clear that suspicion must attach to any apparent evidence of personal infection in an endemic area; and we are not aware that apart from intentional inoculation, any cases of infection in non-endemic areas have been placed upon record. If the disease is endemic, attaching to locality rather than to the individual, what circumstances have led to its extinction as an endemic disease in England and some other countries? Some light is thrown on the first of these questions by an interesting pamphlet on *Leprosy in Hawaii; A Critical Study*, by Dr. Ashburton Thompson, the Chief Medical Officer of the Government of New South Wales.

The Hawaiian group consists of eight islands, the native population of which has dwindled down from 71,019 in 1853 to 40,622 in 1893; while during the same period the foreign population has increased from 2,119 to 49,278. Of the foreigners, Chinese, Japanese and Portuguese form the largest proportion. The present prevalence of leprosy in the Hawaiian group is usually ascribed to the importation of Chinese lepers about 1855 or 1860. Dr. Thompson, however, shows that there is strong reason for believing that the disease was prevalent among the aboriginals as early as 1822, ofttimes mistaken for syphilis. The origin of the disease in the Hawaiian group must therefore be regarded as unsettled.

The attempts at isolation in the settlement on

5 EDITORIAL in *British Medical Journal*.

the island of Molokai have been only partially successful; and are chiefly of importance, because in connection with them Dr. Thompson is able to give some valuable evidence as to the case of the Kokuas and of the Kamaainas. The Kokuas are wives, husbands, or parents of leprous patients who have elected to be ostracised with them; while the Kamaainas are the old inhabitants of the district in which the leprous settlement was established. A large number of these remained after the starting of the settlement, and were thus exposed to the risk—if such risk exists—implied in the importation to them of an extraordinary number of lepers in a stream constantly renewed during thirty years. With regard to the Kokuas, all that can be said, on the strength of the somewhat imperfect evidence available, is that they probably did not acquire leprosy in any remarkable proportion as compared with the general population. As to the Kamaainas not only is it clear that they were not affected in remarkably large proportion, but "it is even tolerably certain that the number which ever suffered was very small."

The facts detailed in Dr. Thompson's investigation into leprosy in the Hawaiian group support his views as to the telluric origin of the disease, communicated to the Public Health Section of the Australasian Association for the Advancement of Science (Brisbane, 1895). In this paper it is shown that long-continued intimate contact with lepers is often suffered with impunity, while leprosy is often contracted when there has been no conscious contact with any leper. Evidently the discovery of the bacillus lepræ does not necessarily imply that leprosy is spread by personal communication. Tetanus is an infective disease, but it is seldom if ever maintained by communication between those suffering from it and the healthy. The vast majority of instances of apparent spread of leprosy by infection are spoilt by having been observed on areas of recognized endemicity, so that the influence of locality cannot be excluded. Having regard to this consideration, it appears clear that leprosy is only communicable by the sick, if at all, with great difficulty. The same conclusion is supported by the fact that imported lepers do not always (if they ever do so) create a new area of endemicity, as they ought to do on the hypothesis of direct or indirect communicability. Boeck and Hansen traced 160 lepers from Norway to the United States, where they lived under no restrictions at all, and yet not a single secondary case of leprosy arose. The arguments which we have briefly sketched have an important bearing on Public Health administration in the countries in which leprosy is still endemic.

The considerations adduced above still leave unanswered our second question, as to why leprosy has become extinct in England. It ought to be practicable by comparison between England of the present day and of the fifteenth century, and by comparison between England and Hawaii and other endemic centres of leprosy, to discover the *differentia*, to detect the factor or factors, the removal of which has caused the disappearance of leprosy in England, and the retention of which preserves the endemicity of leprosy in some other countries. It is still doubtful whether we are to look to dietetic changes or to more obscure telluric changes for the differences here indicated.

Acne.

Spray with a one-half to one-fifth per cent. solution of resorcin, and follow by the application of an ichthyol plaster; after the disappearance of the acne an ointment of chrysorobin, at first twenty per cent., then ten per cent., should be applied.

A curious sect in Russia is that known as the "Runners," because its members run away like a sick animal to some lonely spot to die when disease overtakes them. Another is known as the "Runner-Smotherers." When any member of this extraordinary sect is seized with a mortal or supposedly mortal illness, instead of being allowed to run off to die he is put out of the world by a woman whose title is the "smotherer." The ceremony is, for safety's sake, generally performed, not in the victim's house, but in the common "praying-room," a secret room conveniently situated to escape the prying eyes of authority, and provided with numerous exits in case of a surprise. While psalms are sung and the censor swung, the old woman who usually holds the honorable office of "smotherer" performs her task with a small cushion held over the sick person's nose and mouth, the body being afterward secretly buried in some remote spot, whither it is conveyed under a load of some innocent matter, such as hay.

A physician should not presume upon the time and patience of his colleagues by reading a paper composed of truisms, some facts borrowed from text-books, and much padding. Such exhibitions contribute to international ill-feeling and to personal disdainment. No more should he report procedures based on alleged chemic or physiologic experiments which he is not ready and able to demonstrate by chemic or physiologic tests. Above all, he assiduously should refrain from announcing papers that he does not anticipate being able to present. This latter procedure has already been done to death. If he will take the results of his honest work and intelligent thought, it matters not whether they be based on experimentation or observation, he may be assured of kindly reception and courteous attention.—*Medical Record.*

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APRIL 30, 1898.

Editorial.

WRITING FOR THE MEDICAL PRESS.

There has been much complaint among the rank and file of the profession that the minority seem to control the appearance of articles in medical journals, communications not bearing the sign manual of the "chosen few" being generally pigeon-holed until far from timely, or returned as "not available." Perhaps it is natural that those who have been so treated should regard this as the result of a "close corporation" formed between the editor and those dwelling in the land of promise, yet a little inquiry will show that far sounder rules of business policy govern the disposal of contributions from those whose names are as yet unknown to fame.

It is safe to say that it is a very small percentage of editors who do not judge an article purely and simply upon its merits. Yet the standing of the author must necessarily constitute part of that merit or availability. All things being equal from a literary standpoint a disquisition upon the principles of antisepsis, by Lord Lister, will prove far more valuable than what John Smith, of Dumptown X-roads, may desire to publish as the results of his experience and researches. There is no doubt but that some of the most important advances in medical science have been made by men who at the time were in the obscure position of this same studious and ambitious John Smith, and that they only became famous through the discoveries thus made. Still the fact remains that the journal which devotes itself entirely to the exploitation of the "mute inglorious Miltons" will become of small repute and of little demand by the large body of medical men, who, although themselves anxious to enter upon the flowery paths of public notice, do not appreciate reading only of the work of those who have fame *in posse non esse*.

The standing of the candidate for publicity would have less importance accorded it were it not that the great body of contributors seem to apprehend so little the scope of the medical journal. Articles are daily offered for publication, well-written, it is true, each sentence rhetorically correct, of polished phrase, semi-scientific, humorous and even jocular in tone; yet often dealing with scientific matters only in a way adapted to the consideration of high-school students instead of busy men of science, whose hours for reading are too few and far between to be wasted. We have the after-dinner chats of budding medicos, the gossip of the class rooms, speculations on how to best meet the sample fiend, and glowing accounts of the benefits following the application of the latest proprietary panacea for human woes. We have elaborate accounts of the setting of broken limbs, the lancing of felons, of uncomplicated births, and of how to treat diarrheas. We have the merits of the serum treatment and the efficacy of Widal's test, discussed by men who scarce know whether to administer antitoxin by mouth or sub-cutaneously, or whether it is better "boiled or raw."

Occasionally some one reports a case of real interest—an emergency employment of apparently useless materials near at hand, an obscure diagnosis cleverly made, or a novel application of a well-known remedy. Often as not the editor groans in spirit over these reports since though of the greatest practical value they are obscurely written, verbose where verbosity is next to crime and, frequently, too brief on the very point that is of novelty and therefore of interest. Sometimes the article must be practically rewritten, at the cost of infinite patience to discover and reveal the real meaning of the writer. Perhaps the point is overlooked in the momentary impatience attending the perusal of illy written and worse

constructed sentences that seem to promise nothing save the old story of an attack of *cacoethes scribendi.*

Should it attract by reason of its one worthy point, and the editor spend valuable time in making the article of use, too often the author loses all sense of proportion and, where a man of acknowledged reputation asks no recompense further than the publicity gained and the reprints which are cheerfully accorded, he will be dissatisfied with anything less than so much per page and the reprints also. If he meets with the to-be-expected courteous refusal some rival publication will at once be favored with a manuscript bearing upon editorial pirates and their methods.

Apropos of all this comes the question of how to write in order to make the production of value. Perhaps the following suggestions, though trite, may be of value to the neophyte:

In accordance with the principle laid down by the late Mrs. Glass, first, be sure that you have something to write about.

Next, be certain that you know how to write, so as to bring out all the facts of interest. Do not strive after too "literary" a style. The man who deals in sesquipedalian dithyrambics will never be so much appreciated as he who finds his best expression in anglo-saxon derivatives. Between a technical term of mongrel Latin or hybrid Greek, and an expression of equal value in plain English depend upon it that the last alone will add either dignity or clearness to your style.

Of all things, avoid the useless multiplication of words. It is necessary, of course, to elaborate your theme, for a mere syllabus can convey but little to even the adept. Still in flying from the Scylla of imperfect elucidation it is possible to be engulfed within the Charybdis of too great attenuation of thought.

Write short articles. If you have two cases of interest but of different diseases do not describe them in one article with a complicated heading, but write about each separately.

Do not consider yourself abused if the heartless editor strikes out all of your "finest" writing. There is no place for the sentimental in a purely scientific journal and no matter how touching "beautiful baby features" nor how pathetically attractive the woman who comes under the knife of the gynecologist may be, both viewed from the standpoint of the hard-hearted and presumably hard-headed medical editor are but "cases" and of interest solely as such.

Be natural. You would not assume a "professional strut" in walking,—why become stilted with the use of the pen? Literary pyrotechnics too often miss fire and nothing is more dismal than a pretentious fizzle.

Lastly, be modest, not necessarily by writing impersonally but in the more important point of truly weighing the value of your article to yourself, the profession, and to the editor who gives it publicity.

Correspondence.

To Editor REPORTER:—Will you kindly publish the following statement, which is sent to a number of leading medical journals:

I have been annoyed at intervals for several years, by the use of my name in an advertisement of Sander & Sons' eucalyptol, in spite of a formal demand to have it discontinued. I have never given this firm a testimonial, have no reason to express an opinion as to the merits or demerits of their preparation and have scarcely had an opportunity to use such a drug, since limiting practice, five years ago.

A private letter, written some eight years ago, in regard to eucalyptol—manufacturer unspecified—has been used by this firm, by means of an interpolation, to advertise their wares. Certain errors of transcription make it appear that my ideas as to nomenclature of pulmonary diseases are decidedly original.

Buffalo, May 10, '98. A. L. BENEDICT.

Gastrostomy is often followed by septic bronchitis or broncho-pneumonia due, probably, to the aspiration of secretions which the esophageal narrowing prevents the patient from swallowing. The operation can be very well done under cocain or eucain, and this danger thus avoided. It is only necessary to cocainize the skin, since work on the viscera which are involved is not apt to cause pain.

In some cases physicians fail to use the care that they should in giving morphia to strangers, on the mere profession of pain. In how far, moreover, physicians are responsible for the growing habit formed by patients, to whom they give injections for pain, for loss of sleep, for asthmatic attacks, or other apparently good reason, is a grave problem. Certain it is that, in many cases, the bold use of morphia gives relief and brings about recovery as nothing else can, and no bad habit results. Certain it is, in other cases, one dose necessitates a second, this a third, and so on.—*Philadelphia Polyclinic.*

Abstract.

THE RELAPSE OF TYPHOID FEVER.*

There is no doubt that of all the common acute specific diseases typhoid fever is the one with the greatest tendency to relapse. Of this tendency we have had a most exceptional experience in the cases recently treated in University College Hospital, for of the 71 cases no fewer than 28 underwent a relapse. This proportion of forty per cent. is greatly in excess of the usual frequency, which Murchison gives as three per cent., Liebermeister eight per cent., Fagge eleven per cent., and Shattuck sixteen per cent.; in fact, it seems to be the highest ratio recorded, though it is well known that the percentage of relapse varies greatly in different epidemics, and quite small outbreaks affecting only a few persons have been met with in which every case relapsed. In two of our cases there was a double relapse, and in one, three successive relapses occurred. No case of further relapse was met with, although four successive relapses have been seen; and Jaccoud and Netter have each published a case in which there were five.

No explanation of the cause of the frequency of relapse with us can be given, especially as the factors concerned in its production are practically unknown. It is sometimes said that it may be induced by cold, excessive fatigue, or injudicious diet during the convalescence; but none of these conditions would be sufficient according to modern views actually to set up fresh intestinal ulceration, though they might undoubtedly render a relapse otherwise produced more severe. In our cases nearly all occurred while the patient was still in bed and taking strict typhoid diet; while no relapse was seen in several cases which were tentatively treated on the lines advocated by Barrs, by giving solid food immediately the temperature fell. This shows the small importance of these factors in the production of a true relapse, though they might undoubtedly produce a false relapse or after-fever, which, being formerly confused with the true condition, gave rise to the exaggerated notion of their importance.

It is agreed that relapse more often follows cases treated by the routine application of cold baths. Our cases, however, were not treated in this way. Those who advocate the baths explain this by the decreased mortality, and state that if the percentage of relapse is calculated, not on the total number of typhoid cases treated but on the number recovering from the first attack, there is then but slight increase in the frequency of relapse after this treatment. It is also sometimes stated that relapse is more common in children, Henoch seeing sixteen relapses in fifty-seven cases in children; but this difference, according to the age of the patient, is not well marked as a rule.

The variety of typhoid fever most likely to be followed by a relapse is also undetermined. Liebermeister, in his article in Ziemssen, gives his opinion that relapse is more common after severe primary attacks; while nearly all other writers hold that they more often follow mild attacks, especially the so-called ambulatory or abortive forms. The majority of cases treated last year in University College Hospital have certainly been mild, as shown by the fact that there were only five deaths in the seventy-one cases, giving a mortality of seven per cent. against the usual hospital mortality of fifteen to twenty per cent. It is noticeable, however, that the relapses were not seen in the mildest cases with but one or two exceptions.

Symptoms occurring at the end of the first attack premonitory of a relapse were rarely seen in these cases. In three there was persistent enlargement of the spleen after the end of the primary fever, though this symptom certainly did not have the frequency and prognostic importance ascribed to it by Gerhardt. In no case did we see in the apyretic interval either continuation of the diarrhea or persistence of the rose spots, which have both been described as premonitory symptoms. In fact, two very interesting cases in which fresh spots continued to appear after the temperature had fallen, in one case for a fortnight after the end of the attack, altogether escaped relapse, although it was expected.

The question of the length of the interval between the first attack and the relapse raises the important point as to what is exactly meant by a relapse, there being a considerable difference of opinion on that point—a great confusion in the use of the terms "relapse" and "recrudescence." All would probably agree with Griesinger's anatomic definition, that the relapse is a true repetition of the whole morbid process, at least of the affection of the intestinal mucous membrane and mesenteric glands, which fact has not been denied since the time of Trousseau. This repetition of the pathologic condition produces clinically a re-establishment of all or some of the symptoms of the first attack. Murchison, however, confines the term "relapse" to a second evolution of the febrile process after convalescence from the first attack is fairly established, and states that it must not be confounded with a recrudescence, which he defines as a fresh elevation of temperature, lasting for several days, and occurring before the original attack has come to an end; and he also states that after a recrudescence we do not as a rule find evidence of recent disease in the intestinal glands as in fatal cases of relapse. Dreschfeld also does not recognize relapses occurring before the primary attack is ended, and

* G. Bertram Hunt, M.D., in *The Practitioner*.

uses the term "recrudescence" for slight irregular rises of temperature during convalescence not following the typical course of a relapse, and often due to errors of diet and constipation, and common in anemic and highly nervous patients. Most authors agree in using the word "recrudescence" to mean this after-fever or false relapse, many examples of which were given by our cases. It occurs during convalescence, and usually consists of a short, sharp rise of temperature, often to 102° to 103°, lasting only a few hours or days; but sometimes there is only a slight evening rise of temperature, lasting for a longer period. It is only a recrudescence of the fever and not of the disease, and must therefore be carefully distinguished from a true relapse, from which it differs in the absence of symptoms and by the shorter and more irregular course of the fever. The pathology is practically unknown; if it is due to any slight complication, this usually is undetected. Cases are sometimes met in which unexplained rigors occur during the convalescence. I have seen one, in which there were four successive rigors with rise of temperature to 103 or 104 degrees, which ultimately got quite well and in which no cause was ever discovered.

It is now generally recognized that a true relapse may appear before the end of the primary attack, the rise of temperature occurring before the first fever has ceased, thus resembling a subintrant attack of ague. Four good examples of this form of relapse were described by Irvine and Shattuck saw eleven cases of this kind in twenty-one relapses, and they are recognized by most writers, including Fagge, Osler, and Chantemesse. Of the occurrence of this variety of relapse we have had most convincing proof, since of our twenty-eight cases of relapse, as many as fifteen occurred before the temperature had reached the normal, eleven others after an apyretic interval, and in two cases there was an intercurrent relapse, followed after an apyretic interval by a second relapse, this great frequency of these intercurrent relapses being a very marked and unusual feature. In every case of this form of relapse the fresh attack occurred near the end of the primary fever when the temperature had become intermittent. That it is exactly the same clinical process as the ordinary relapse is shown by the general course of the fever, and also by the fresh appearance of spots or diarrhea or re-enlargement of the spleen, all of which were seen in several of these cases. In our only necropsy of a patient dying of an intercurrent relapse, both recent and old intestinal ulcers were found, thus showing that there was a definite recurrence of the intestinal affection. In fact, the relapse is absolutely the same clinical and pathologic condition whether it occurs before or after the end of the primary fever; and no hard-and-fast line can be drawn between the two forms.

As some writers have not included these cases as relapses, others, especially French authors, have described them under the term "recrudescence," although acknowledging them as true relapses. This, however, is bound to cause confusion, for, as has been already mentioned, many, including Murchison, Osler, and Dreschfeld, apply the word "recrudescence" to the very different condition of false relapse or after-fever. By far the best term, and one which explains itself, is that of intercurrent relapse, which was used by Irvine in 1879, but has not been since adopted.

In our fifteen cases of intercurrent relapse, the fresh attack of fever lasted from seven to twenty-eight days, the average being sixteen days. In two cases it was followed by a second relapse after an apyretic interval, and in one very remarkable case there was a sequence of three well-defined intercurrent relapses, the total duration of the primary attack and relapses being eighty-two days, or nearly three months, a normal temperature never being attained in the intervals. A case like this, in which the succession of relapses can be clearly seen in the temperature chart, strongly supports Irvine's suggestion that this is the explanation of most cases of enteric fever with prolonged pyrexia. This is one of the longest cases of uncomplicated enteric fever with sustained temperature recorded; in the case of Chantemesse, which extended over five months, there were periods of normal temperature in the intervals.

In our eleven cases of relapse, after a period of normal temperature, the interval varied between one and nineteen days, the average being eight days, thus lying between the mean of five days given by Irvine and eleven days by Murchison. Relapses after an interval of several weeks or even months have been described; but in these cases it has been supposed that there have been other relapses in the interval; and it was pointed out by Irvine that the symptoms of the relapse may be very slight, so that it might easily escape notice unless the temperature is taken regularly for some time after the end of the primary fever.

These cases were no exception to the general rule that the relapse is usually mild. Of the twenty-eight relapses only three died, and in eight cases the duration of the fever did not exceed a fortnight, and in the majority of instances was shorter than the original attack. The course of the fever in all cases resembled that of an ordinary primary attack. We did not see either the sudden rise at the onset mentioned by Irvine and Hutinel, or the peculiar course of the fever described by Irvine as very characteristic—namely, the temperature reaching the maximum on the fifth day, then a sudden drop on the ninth or

tenth day of two to six degrees, rising again directly after, but showing daily remissions till the end, the total duration being typically about twenty or twenty-one days. The symptoms only differ from those of the primary attack in being, as a rule, milder, and appearing at an earlier date. Thus the temperature reaches its maximum sooner. The rose spots usually appear from the third to the seventh day, and the temperature begins to fall in the second week. This shortening and mollifying of the relapse is very probably due to the partial immunity conferred by the first attack.

A satisfactory explanation of the mode of production of the relapse is still wanting; all that can be done is to see how far the various explanations that have been given are borne out by facts. Greisinger held that a relapse was due to fresh typhoidal infection, either from the ingesta or from other patients in the ward. This explanation is very unsatisfactory, and does not account for relapse in completely isolated cases whose sole diet is sterilized milk; and it also supposes that a patient convalescing from typhoid is extremely liable to catch the disease afresh, although we know that an attack confers an almost complete immunity for the rest of the patient's life.

Maclagan's view that the relapse is only seen in cases with constipation, and is due to infection of the intestinal glands by sloughs cast off from the previously diseased follicles above, is well known. It has not, however, been generally accepted, but has more recently been strongly supported by Stewart, who finds that there was constipation or at least absence of diarrhea, in forty-one out of fifty attacks followed by relapse. He also finds that in forty necropsies of patients dying of relapse, well-marked ulceration of the large intestine with healed ulcers in the ileum were found in eighty-five per cent., thus suggesting that the large bowel was infected by sloughs cast off from the lower end of the ileum. That constipation predisposes to relapse is very doubtful. A large number of our typhoid cases had constipation, which, taken with the great frequency of relapse, at first seems to support this view. But on closer examination, this is not so; for on taking two groups of cases, one in which there was marked constipation requiring regular enemata, and the other in which there was more or less marked diarrhea, we get the following result:—

		Single attacks	Relapses.
Cases with constipation	24	19	5
Cases with diarrhea	24	8	16

This clearly shows that with us relapse occurred much more frequently after attacks with diarrhea; and Hutchinson states that in every case of typhoid he has seen with relapse there was diarrhea. The great frequency of ulceration of the large bowel in autopsies of cases that have relapsed is also capable of another explanation than that of infection from above. The brunt of the primary attack, of course, falls on the lower end of the ileum, as shown by the cicatrised ulcers there. When the disease breaks out again the fresh ulceration must occur either in the ileum above or in the large intestine below, and these are the positions in which the ulcers are usually found. The ileum, except at the lower end, is not very susceptible to typhoid ulceration, and this seems to be quite sufficient to account for the great frequency of ulceration of the large intestine in cases of relapse. This theory of reinfection by sloughs from above also fails to explain the fairly common cases of relapse in the fourth week from the commencement, as the reinfection must then have occurred in the second week of the disease, before the sloughs are cast off.

Another explanation of the relapse is reabsorption of toxic material from the spleen and mesenteric glands, on the assumption that they remain enlarged in these cases after the end of the primary attack. I have mentioned before that this persistence of the splenic enlargement cannot be detected clinically except in a small number of cases; and reabsorption of the poison, though it might account for the fever and some other symptoms, cannot produce fresh intestinal ulceration; and, in fact, there is found to be a real reinvasion of the intestinal and mesenteric glands by the typhoid bacilli.

It has now been proved that after an attack of typhoid the bacilli do not totally disappear from the body for some time, but certain numbers are occluded in the spleen and other glands, where, as a rule, they remain innocuous and gradually perish. Chantemesse explains the relapse by a fresh growth of these bacilli, and he points out the close analogy of this process with the normal course of events in relapsing fever. In this disease during the first febrile period the spirilla are found in the general circulation, while in the apyretic interval they are only seen in the spleen, whence they again emerge to cause fresh blood infection, thus setting up the relapse. Of what causes the fresh bacillary infection in certain cases of typhoid we are ignorant. Certain experiments of Sanarelli in this direction are interesting, but are unfortunately inconclusive owing to the great difference between the disease produced experimentally in animals and that met with in man. He found that by injecting toxic products of coli bacillus or proteus vulgaris into the peritoneum of guinea-pigs when quite recovered from an experimental typhoid infection, the only remains of which were a few points of pus at the original seat of inoculation, he could always produce a fresh invasion of typhoid organisms from the bacilli in these old lesions, and could thus reobtain the complete picture of experimental typhoid. It might be suggested that

some cause such as cold, fatigue, indigestion, or other disturbance of health during convalescence, might in man play the same rôle as the experimental injections of toxins in animals in producing relapse; but, clinically, it is nearly always quite impossible to point to any such cause of the reinfection, and, in fact, relapse seems to be quite a rare event in a patient suffering from any suppurative or other complication of convalescence.

Whatever may be the cause of the reinfection, it would be obviously inoperative unless the immunity produced by the first attack was either incomplete or produced more slowly in these cases. That this may be an important factor in determining the relapse is suggested by the great frequency with which abortive or mild attacks are followed by relapse. Unfortunately we cannot estimate clinically the grade of the immunity. I certainly noticed that in many cases which afterwards relapsed the blood serum gave a well-marked agglutinative reaction early in the first attack; but this cannot be taken to show a high degree of immunity, since Widal and others hold, owing to the early stage of the disease at which it appears, and for other reasons, that it is not a reaction of immunity, although some, including Gruber, believe that it is.

The relapse of typhoid fever, like the similar relapses more rarely seen in the other acute specifics, thus continues to baffle the clinician and pathologist alike, the former being as powerless to foresee or prevent its occurrence as the latter is to explain the mechanism of its production.

MORPHOLOGY OF LEUKEMIC BLOOD*

Attempts at improving our knowledge of the finer changes in the blood in leukemia are warranted by a number of reasons. One of the most important is the difference of opinion regarding the dependence of the character of the blood on alteration of one or other blood-forming organ. Few still believe that from the composition of the blood a positive diagnosis of the organs diseased can be made, but other equally important points are still the subjects of great uncertainty. We have in mind especially the relation of so-called myelogenic or myelo-lienogenic to lymphatic leukemia.

Some understand under the latter term a condition associated always with marked enlargement of lymphatic glands; others understand a peculiar condition of the blood, associated especially with an increase of small mononuclear cells. The question of the relation of acute to chronic leukemias is intimately associated with the one just mentioned, because it has been claimed that acute leukemia is always, or almost always, characterized by a lymphemia, or, to use a better word, lymphocythemia.

Our imperfect knowledge of the origin of the leucocytes is the greatest obstacle in the study of leukemia. There is a growing belief in the development of the various kinds of leucocytes from a small round cell,—a belief that to a certain point has much in its favor. On the other hand, we cannot believe that all varieties of colorless blood corpuscles are due to such a process. The eosinophile cell, for example, may be produced in any one of a number of different organs or tissues and enter the blood circulation. We must therefore believe that, at least partly, the blood is "the representative of all the organs." (Weiss.)

When we examine minutely the blood in leukemia, in a large series of cases, we find certain striking differences. It seems reasonable to suppose that these differences in the blood are associated with differences in the anatomical changes in the organs, not, as was originally supposed, as regards seat only, but as regards the histologic alterations.

In chronic leukemia the conclusions of a large number of observers coincide in the view that the most striking characteristic of the blood is the polymorphism of the cells, especially the leucocytes. Along with cells which differ from ordinary leucocytes only in size, we also find cells such as are normally found only in bone-marrow, —eosinophile cells, sometimes very large or very small, and with simple round or oval nuclei; cells of similar size and shape, but with neutrophile granules in the protoplasm; also nucleated red blood-corpuscles. Sometimes mitoses are found, rarely in the red, more frequently in the white corpuscles. When such blood is allowed to stand for a short time Charcot's crystals form, or they may appear in blood dried at once after leaving the body, as Westphal has described, and as I have seen in one case. That these characteristics, already noted by others, occur in the majority of cases of chronic leukemia, I claimed four years ago, and in a large number of cases observed since then—thirteen in my own clinic —I have confirmed this belief. But cases otherwise apparently similar may have blood of a very different character. E. Neumann was the first to emphasize this point, but as his observations were made before the use of color-analysis, his views have not received as much attention as they deserve. Cases apparently similar have been studied, with the use of staining methods, by Askanazy, Lenhartz, and others. The interesting case mentioned by Grawitz in his monograph seems to me to represent still another variety. I have in my possession preparations which appear to be identical with those of Grawitz, but different from those I describe below. The examination of the tissues has not yet been made.

I wish at present to call attention to a case of chronic leukemia with an increase of only small

* Geo. Dock, A.M., M.D., Ann Arbor, in *University Medical Magazine*

mononuclear cells in the blood, in which the period of time during which the blood was examined and the opportunity for examining the tissues post mortem seem to furnish important data for the study of leukemia.

The patient was a man of 52 years, who was never sick until, at the age of 48, he had influenza. He never recovered his health after that, but remained pale and weak. Two years later he discovered a tumor in the left side. This persisted, slowly growing larger, and with this marked dyspnea developed.

I first saw the patient a year and a half after he discovered the tumor. He was pale, dyspneic, had slight edema of the ankles. The spleen and liver were much enlarged, the former reaching from the eighth rib in the axillary line to the middle of the left rectus muscle and to the left iliac fossa; the liver extended to the level of the umbilicus. The lymphatic glands were not greatly enlarged, those in the axillæ and inguinal regions being easily palpable. The patient complained of spontaneous pain in the sternum, in some of the ribs, and in the tibiæ, and stated that at times painful swellings developed over the lower part of the tibiæ.

The blood was pale and watery. It showed 1,925,000 red blood-corpuscles and 312,500 leucocytes per cubic millimeter; Fleischl 40 per cent. Almost all of the leucocytes were small, having the size and appearance, in the fresh blood, of small lymphocytes, rarely exceeding the diameter of average red corpuscles. In the dried blood, they have diameters of from four to ten microns, most of them six to eight microns. The round nuclei take nuclear stains readily, and when stained appear often to be fragmented, being composed of segments of irregular size and number, separated by narrow fissures. Eosin makes the fissures more distinct. With Ehrlich's neutrophile mixture the fissures appear as brown lines, suggesting at first the idea of granules, but with the best lenses (Zeiss' apochromatic included) the granular appearance is only apparent. Not all the nuclei are fragmented in the manner described, and one can pick out a series from the smaller cells resembling normal fragmentation.

The protoplasm of these cells is very scanty. In the smallest cells it is difficult to demonstrate, but is more developed in proportion to the size of the cell, sometimes forming a complete ring, at other times only a crescent-shaped band. The protoplasm sometimes contains fine, rarely coarser, basophile granulations (methylene-blue). These cells, including those up to ten microns in diameter, with deeply-stained nuclei, make up from ninety-seven to ninety-nine per cent. of all the well-preserved leucocytes in the blood. (In my counts I have used from 1,000 to 1,600 cells each day.) There are a few cells of similar appearance, but with slightly more protoplasm and with larger nuclei. The nuclei of these cells are also fragmented in the same way, and stain not quite so deeply as the smaller ones.

Multinuclear cells with neutrophile granules, in all respects like the similar cells in normal blood, are present in the proportion of one-half to one per cent., only once being as high as one per cent. There was, therefore, an absolute decrease of these cells, the number per cubic millimeter being usually less than 3,000. Eosinophile cells, always of normal size and with polymorphnuclei are never more than one per thousand, sometimes only one in three or four thousand leucocytes. Leucocytes with round or oval nuclei, and with neutrophile granules (Ehrlich's "Markzellen") are present in the proportion of from one to five per thousand. Nucleated red blood-corpuscles—normoblasts—are present in the proportion of about one per thousand leucocytes.

The blood always contained large numbers of degenerated leucocytes, recognizable only in stained preparations. It is possible that some of these were overlooked in the counts of the fresh blood. These cells have swollen bodies, sometimes with irregular outlines, or with the appearance of vesicles along the edges. They stain less deeply than well-formed cells, but there are, as regards staining, many transition forms. The plainly degenerated cells have a proportion to all those that stain well of from six to thirty per cent. The latter proportion was found only once in counting 1,700 cells, the number being usually less than 20 per cent. Almost all of these can easily be recognized as derived from the small round cells, but there are also a few degenerated polymorphnuclear, eosinophile, and mononuclear neutrophile cells.

The patient was under observation four months, and died after an attack of influenza with broncho-pneumonia. In the last illness the condition of the blood was not altered. In the preceding four months the blood was examined weekly, fresh and in color-glass preparations. Charcot's crystals were looked for each time in blood preserved in capillary tubes and in the moist-chamber. They were never found. The coagulability of the blood was diminished.

There was a gradual improvement in the blood in the beginning (the patient was taking arsenic and extract of red bone-marrow.) Then the condition became worse, so that a week before death, and just before the influenza, the blood showed 1,542,000 red, 580,000 white corpuscles, hemoglobin 30.

Post mortem, besides the extensive bronchopneumonia, the most important changes were as follows:

The spleen weighed 1,170 grams; capsule wrinkled and in some parts thickened; the cut surface anemic, the Malpighian bodies large, from three to five millimeters in diameter; the parenchyma dark, grayish red, the trabeculæ not

marked. The liver weighed 2,200 grams; pale; cut surface bloodless, slightly granular; acini distinct; no macroscopic lymphomata. The kidneys were slightly enlarged; pale; the cortex relatively narrow. The mesenteric glands not enlarged. The retroperitoneal glands large, up to one and a half centimeters in diameter, moderately hard, pale on section. The only superficial glands enlarged were those in the inguinal regions. Some of these reached a diameter of one-half centimeter. These were also hard; on section showing red areas alternating with pale and gelatinous ones. The ribs, vertebræ, sternum, and shafts of the tibiæ contained dark-red marrow of moderately firm consistence, resembling normal spleen tissue. The tibiæ, at the seat of the old swellings, showed neither thickening nor sclerosis. The periosteum was slightly thicker than in other places. The other organs showed no gross leukemic changes. During life it seemed there might be lymphoid hyperplasias in the alimentary canal, but the latter was entirely free from such alterations.

Spleen juice and red heart clot, kept for weeks in a moist-chamber, showed no Charcot's crystals. In bone-marrow, after many weeks in the moist-chamber, some very small crystals resembling Charcot's appeared.

The histologic changes in the various organs consist essentially of a marked increase, or, as in the bone-marrow, a new growth of lymphoid tissue. The follicles of the enlarged lymph-glands are filled with small cells, the germinating centers are usually not to be seen, the lymph-sinuses are filled with small cells, and in many places the capsules of the glands are densely infiltrated. Only occasionally can a small part of a lymph-sinus be found in which large cells are present. Eosinophile cells are very rare in the lymph-glands.

In the spleen, besides the enlargement of the follicles, there is an extensive development of lymphoid tissue in the parenchyma, not dense enough, however, to produce nodules. The liver contains large numbers of small cells in the capsule of Glisson, and in the capillaries. The kidneys, slightly sclerotic, have no characteristic leukemic alterations. The bone-marrow consists of tissue closely resembling that of the hyperplastic lymph-glands. A very few small areas can be found, in most sections, in which there are large cells, with round or oval nuclei, a considerable amount of protoplasm, and which when properly stained, show neutrophile or, very rarely, eosinophile granules. Some of these larger (neutrophile) cells contain mitoses, the smaller ones never. Very few of the ordinary multinuclear giant-cells of the marrow are present, and nucleated red blood-corpuscles are almost entirely absent. Cover-glass preparations of the bone-marrow show large numbers of small cells like those in the blood, no eosinophile cells, very few mononuclear neutrophile cells, and very few neucleated red corpuscles. The small cells resemble those in the blood, not only in size but also in the relative proportions of nucleus and protoplasm, in the affinity to stains, and in the fragmentation of the nuclei. Degenerated cells are also present, resembling those of the blood.

The small cells in the lymphomatous areas, as well as in the bone-marrow, also show the peculiar fragmentation of the nucleus, though, owing to the condensation of the cells in the tissues, the fissures are not so distinct. These cells, it should perhaps be said, are slightly smaller than cells in normal lymph-glands prepared in the same way. They resemble the small cells found in the marrow of non-leukemic subjects, and those often present in the blood in pernicious anemia.

The clinical features of the case, including the condition of the blood, assign it a position among the group of diseases most conveniently termed chronic leukemia. In attempting to assign it more definitely to a subdivision of that group we cannot be guided by the gross alterations alone, and speak of it as a myelo-lienogenic or a mixed case, because the blood differs in important respects from that in the large proportion of such cases. If we class it according to the blood, it must be termed a lymphocythemic case, but we must then not lose sight of the fact that the cells differ in certain particulars from ordinary lymphocytes. It has been thought by some that a lymphocythemia can occur as a temporary change in the course of a chronic mixed leukemia, and, although this may be true, the period of observation in my case is quite too long to permit the conclusion that the small cells were only temporary sojourners in the blood. Moreover, in the case of Askanazy, with very similar cells, the observations extended over even a longer period.

In explaining such a case, some might claim that the small cells came from the lymph-glands only, and from the blood were deposited in the various organs. It seems much more rational to consider all the lymphoid tissues as possible sources of the cells,—not only the hyperplastic tissue in the lymph-glands and spleen, but also the tissue in the bone-marrow, which may be considered a heteroplastic lymphoid tissue, comparable to a metastatic process in tumor-formation.

The great development of lymphoid tissue accounts for certain peculiarities in the case other than the excess of small cells in the blood. The diminution of normal eosinophile cells and the small number of neutrophile marrow-cells, the scarcity of nucleated red blood-corpuscles and the absence of Charcot's crystals, all indicate a remarkable alteration of the bone-marrow which can be most easily explained by a crowding out, as it were, of the normal tissue there.

The diminished number of the usual varieties of leucocytes is interesting. This might be explained by the cachexia alone, by the alterations in the usual sources of such cells, or, in view of the degenerated small cells, as the result of failure of development on the part of cells which in the ordinary course should have become polymorphnuclear, with neutrophile granules in the protoplasm. A satisfactory answer does not seem possible. The idea that the degenerated cells are artefacts will of course arise. Although the appearance they present in stained preparations is partly the result of the necessary manipulations, all who are familiar with the subject will admit that with normal blood so large a proportion of so-called degenerated cells cannot be artificially produced.

This case, I think, proves the claim of Neumann, that the peculiarities of leukemic blood depend on the kind rather than on the seat of the anatomic alterations.

It seems to prove also that the excess-cells in leukemic blood may be derived from any tissue in which such cells are formed, provided means are present for entering the circulation. What those means are we do not know.

As regards the relation of this case to leukemias in which the disease is limited to the lymphatic glands, I am unable to say anything, never having seen such a case. About three years ago I was consulted by a man who had extensive enlargement of the lymph-glands in the neck, axillæ, and groin. He had been considered a case of Hodgkin's disease by some, lymphatic leukemia by others. I found the spleen enlarged, red corpuscles 3,730,000, leucocytes 70,000, Fleischl fifty. There were fifteen per cent. of Ehrlich's myelocytes, sixty per cent. polymorphnuclear, ten per cent. small mononuclear, nearly all of which had more protoplasm than the cells termed lymphocytes in the case used as the text for this paper, 1.4 per cent. eosinophile, a small proportion being mononuclear, thirteen per cent. degenerates, normoblasts, one to 500 leucocytes. The general appearance of the blood was that of a mixed case of leukemia, so I advised against operation, which had been urged by a surgeon. The patient died a few months later.

As to acute leukemia, I have been fortunate enough to examine the preparations of Professor A. Fränkel, of Berlin, who has had so remarkable an experience with this disease. The blood in his cases, as appears from his descriptions, if not from his nomenclature, is quite different from that in my present case, as well as that in the case of Askanazy. (It may not be out of place to say that the blood in Fränkel's cases resembles closely that in my case of chloroma, the clinical features of which were very similar to those in many cases of acute leukemia.)

In conclusion, we must admit that a polymorphism of the leucocytes is by no means essential as a criterion of leukemic disease, but that there may be instead a preponderance of one particular kind of cell. Although this may conveniently be termed a lymphocyte, it is necessary in reporting cases to go beyond that term, and give accurate descriptions of size, form, and tinctorial peculiarities.

CHARACTERISTICS OF INSANITY*.

The striking thing to be noticed in intercourse with insane persons is that one can never get on a common footing with them. There is always some intangible, indefinite, indefinable obstacle to mutual comprehension, which prevents the usual good understanding one expects to have with every one. Often there is the greatest willingness on the insane person's part to appreciate what you say, and to co-operate in what you wish him to do; and very often he is himself perfectly satisfied that he is wholly one with you. But all the time you have the vague consciousness there is a third party to the transaction. You do not alone have his ear — you are addressing him, plus some other side of his personality, and he unconsciously is giving a qualified assent to your arguments. Your attitude toward him is somewhat similar to that toward a child, in which case you do not expect to be fully understood, and you intentionally leave a margin in your mind for his inability to grasp what you say. You explain this simply enough by the fact of the child's imperfect development; his mind is not matured. The explanation is in keeping with the nature of things and is sufficient.

With the adult the case is different. He may be intellectually your equal, or superior, yet there is just this degree of what the French call "disharmonie," which parts you mentally, and no explanation can suffice except that you or he are mentally of unsound or disordered mind. I am assuming that the person is insane, but to a degree not particularly noticeable, and requiring some skill possibly to find out just what the form of trouble may be. I am assuming also that he is not a person dull and stupid mentally, who would naturally find it hard to make out what you meant, but a person of average intelligence.

I am often struck in my interviews with insane persons by their lack of congeniality. Even without speech, there is a lack of attraction, even a repulsion of a very subtle kind sometimes. You are asked to give nothing; you are not needed, often not wanted in that world, entrance to which is denied you. Even if you may be called on and even prayed for to help, as I sometimes have been, you will still be aware of this negative attraction, which holds you at arm's length.

Alienists very often speak of this lack of responsiveness in their patients, and it is a marked

* WALTER F. CHANNING, M.D., *Boston Medical and Surgical Journal.*

characteristic of the insane. We see people often enough who do not respond to what we may say, or do, but they have their reasons, which will be found, on the whole, consistent under the circumstances. With the insane, on the other hand, it is practically the opposite; their reasons are not, on the whole, consistent.

We judge the insane very much by what they do; by their actions, or conduct. You may often find no trace of mental impairment in words, when you would clearly do so in acts. Do not expect, as many do, that the insane will give utterance to strange, grotesque, fantastic ideas, which will stamp them at once as insane. Many times a very insane man will talk for a considerable period and give no sign of his disease. You may not on the surface get a complete clinical picture, but that is because you cannot see at one glance the whole of the human mind, not that the elements of the disease do not exist. In cases of "partial insanity," the mind appears touched only at one point, but that is because it is at that particular point only, at the given time, that the disease has broken through the crust which hides the working of the man's mind, and reveals itself to our gaze, which, in looking into the vast mysteries of human intelligence, is at best dull and stupid.

Observe then the acts of the supposed insane man. See if they are rational acts, in accord with what you would expect a man to do if placed as this man is. Inform yourself most carefully of his habitual methods of action; study into his environment. In well-marked cases the man is so changed that he is entirely unlike himself in what he does; in the more obscure cases it will usually be found that his conduct is inconsistent with what it always has been before, and with what the circumstances naturally demand it should be. A characteristic of mental disease then is inconsistency. Where before was a man who could be relied on to act in a certain definite way, you now have a man who may, or may not, do what he did before. His present conduct is inconsistent with his past conduct; his opinions, his beliefs, his affections all are tinged with some hidden, new influence, which alters him, and shows how imperceptibly yet radically a man's whole nature may be overturned, and made inconsistent with itself, by the insidious, and often slow, growth of the morbid mental process.

Lack of adaptability is another characteristic. In the social life of the community each individual must to some degree adapt himself to others. To succeed he must have a definite end and aim at which he can only arrive by placing himself at the service of others and resolutely adapting himself to the requirements of the situation in which he is placed, and so through life he is always disciplining himself to meet the needs of the community, and the better he knows how to do it the more successful he will be. This particular quality is almost wholly wanting in the insane. The more developed the disease, the more the tendency to individualize dominates them. It is well enough for a man who has talent in one direction to individualize, or more correctly specialize, his work; but this means that he is directing his individual efforts to accomplishing something of an objective nature, and he is really adapting himself all the time to his work. The insane man, on the contrary, expects other things to bend to him. He is the center of things. In so far as the others come to him he may be able to accept what they thrust on him, but he has no power to meet them half-way. All his efforts are for himself; he lives and moves and has his being in a kingdom bounded by the four walls of his own personality.

With this lack of adaptability goes the lack of power to combine with others. In rare cases, a few of the criminally insane have been known to combine together to plan an escape, but, as a rule, if you visit the wards of an insane hospital, you will be struck by the separate lives the patients lead. They often work together, walk together and talk together in small, or large numbers, because they are easily trained and disciplined, but each patient in whom the disease is well developed, unless convalescence has set in, is a kingdom and a law to himself. He need not go to any one else for guidance, help or sympathy, because it all comes from within. Not that he consciously says this to himself, or realizes it; it is to the onlooker that it is apparent. It can be easily seen that this lack of power to combine, to enter into mutual arrangements for the common good, is a serious weakness in a community which is ever forming societies, or coteries for such a purpose. It may entirely prevent any success in a business way, or interfere, jeopardize or destroy the harmony of a family circle.

Change in the affections is an almost constant accompaniment of mental diseases. I will not say that it is invariably, but it is to be regarded as a characteristic symptom. In conditions of depression, the insane man often thinks that he has ruined his family. Therefore he feels himself unworthy of their love, and for the time being believes he has lost it, and acts accordingly. In conditions of exaltation, there is indifference or positive dislike, or exaggeration of feeling. It depends on the degree of intensity of the disease. Where ideas of persecution are dominant, the affections may be entirely alienated. In conditions of depression it should have been further said that the expression of feeling is in abeyance, even if ideas of wickedness or unworthiness are not dominant in the mind. In mixed forms of mental disease there is every shade in the expression of the affections, but rarely if ever are they wholly normal. There is a lack of reciprocalness of feeling. However much affection may be lavished on the insane man, he fails to appreciate it at its true value, and returns little, or nothing.

He cannot be expected to give what is temporarily in abeyance or permanently lost.

Loss of the sense of relation of things is another characteristic of the insane. The ordinary affairs of life, the important questions that may arise from time to time may make little or no impression on their minds; or if they do make an impression, it is an unnatural or perverted one, and in no way what might be expected. There seems to be no consciousness of what these things mean. In a case of religious delusional melancholia, the patient, a most affectionate and religious man, had lost his wife and daughter within a few days of each other. Though he was devotedly attached to them, and externally apprehended every element of his loss, yet in consequence of his disease he had not a feeling of sorrow, and while detailing to me the circumstances of their deaths, played solitaire unremittingly on the side of his bed! Here was not only a change in the affections but also an indifference to the proper relation of things.

While so little consequence may be attached to the important matters, details are exaggerated to almost any extent. Gestures, motions, words, looks may be freighted with a portentous significance. Articles of clothing, food, bits of paper, etc., all possess a new interest and value. The mind is so occupied with these material details that no time is left for more important ones. The consequence of this preoccupation is a gradual loss of grasp on things as wholes, and they lose their normal appearance of totality, and unity. The sense of relation to external objects thus becomes blurred and confused, and no longer possesses its former power of restraining, modifying and controlling the acts of the individual.

With this particular defect goes a loss of the power for comparison, a most important attribute of the mind, for when we cannot compare we lose the power of choice, and when that goes we may be morally unable to distinguish right from wrong.

A loss of initiative power naturally is common among the insane. Taking no longer a rational interest in their affairs, unable to adjust or adapt themselves to their work or social obligations, without the stimulus of love and affection for their families, unable to perceive wherein they are deficient because their power of comparison is gone, it is not remarkable that they feel no incentive or call to perform the duties which once seemed a matter of necessity as well as of pleasure.

There are other characteristics of mental disease, two of these being loss of inhibitory power or disordered and weakened will power, and diminished power of attention being found in every well-developed case, as necessary elemental symptoms. No man wishes to lose his reason, and while he can consciously control his mental processes he will persistently strive to do so. The man of strong inhibitory force will by will-power pass through strains, mental, moral and physical, which wreck the man deficient in such force. From physical causes the strong break down and their natural power of inhibition is weakened; but, other things being equal, the weaker man goes to the wall first. It is, of course, true, that men can be found, in all classes, of weak wills; and it is also true that many of the insane are extremely self-willed without there being perhaps perversion of will-power, or weakness in the ordinary sense. But there is markedly a loss of inhibitory control over the mental processes. The discriminative faculty of will which checks aberrant mental action while it gives free play to what is natural, is in abeyance, or slumbers, or is stifled at its post.

Inhibition acts on the cerebral processes (thereby, of course, including both so-called mental and so-called nervous processes, which, so far as we know, are only different phases of one continuous process) somewhat after the manner of the operator in the signal tower of a railroad. Regularly the trains come and go, now on this track, then on that; one may be retarded or another hastened, but always there is regularity and continuity in the movements of the trains. So long as the operator remains at his post, unless some break occurs in the apparatus, no accident can happen, for his hand is on the lever which controls with absolute certainty every operation of every train. But once let him leave his post, and trust the trains to manage for themselves, and confusion and blocking of the whole road will result. Trains will occupy the wrong tracks, some may collide with each other; others may be thrown off the track. Where before we had system and regularity in moving trains, we shall now have fitful, spasmodic attempts to do the same, and before the operator again returns the whole road may be blocked.

So it is with the function of inhibition. When working normally, every cerebral process flows along smoothly and continuously to a successful and immediate issue. Weakened or suspended, these processes become inchoate, vague, uncertain, paralyzed.

We may say that attention means the power to consciously concentrate thought and project it continuously in one direction. Of all mental faculties this must be regarded as the highest. There are many degrees, however, of attention. The child will concentrate his mind on what he is interested in intensely for short periods to the exclusion of other subjects. But this is not wholly conscious thought, but largely instinctive, arising out of sudden overpowering interest and curiosity. To arrive at the point of higher development of attention requires training and self-discipline. The highest attention means that the mind can turn to the objective consideration of subjects. Emerson says that "A man is intellectual in proportion as he can make an object of every sensation, perception and intuition, so long

as he has no engagement in any thought or feeling which can hinder him from looking at it as somewhat foreign.'" In other words, man is intellectual in proportion to the power he possesses of directing his attention objectively to subjects.

Now we usually find intellectual impairment in the insane. Exceptionally there are insane persons in whom there is what seems enhanced intellectual brilliancy; but even in these cases all the elemental qualities of the finest intellect are generally not present and there is apt to be a lack of perfect equilibrium. Granting that there may be exceptions, the rule holds good that intellectual force and power are both weakened in mental diseases. If the man of intellect deals with subjects objectively, the converse is true of the insane man: he deals with objects subjectively. In the first case the man consciously puts his *ego* to one side; in the second case the man unconsciously puts everything but his *ego* to one side. One dominates the *ego;* the other is dominated by the *ego.*

We often speak of an insane man as "concentrating his attention on himself." This is, strictly speaking, an incorrect use of terms. In such a case the faculty of attention is so weakened that it cannot be exercised except negatively. The man's thoughts are concentrated on himself because he cannot make use of the modicum of attention he may have possessed. His mind feeds on itself because it cannot attend to anything else; it cannot "detach" itself.

We now come to more classical characteristics of mental disease—delusions, hallucinations and illusions. Whenever one of these can be clearly and definitely enough diagnosed, so that there is no question of its existence, there is no reasonable doubt that we are dealing with a case of mental disease. On the other hand, there are many cases of undoubted insanity in which neither can be clearly determined, and some in which neither clearly exist.

Delusion is usually defined primarily as a "false belief," and I advise you to bear these two words in mind for future use, when you may find it difficult to recall quite what a delusion was said to be. It is a false belief contrary to the individual's past experience, inconsistent with his former thoughts and feelings, the result of disordered brain action.

Clouston says:[2] "An insane delusion is a belief in something that would be incredible to sane people of the same class, education or race as the person who expresses it. This results from diseased working of the brain convolutions."

Kirchhoff, a German writer, calls delusions "false judgments." "They are due to the uncritical acceptance of the combination of ideas which occupy the foreground, and this depends on some morbid condition of the brain."[3]

Régis, a French writer, says: "Delusive conceptions are not only difficult to define because they are far from being always absurd in themselves, but also because it is not always easy to distinguish them from error. The difference does not consist, as has been claimed, in that the delusive idea is not changed in spite of the accumulation of the most absolute proofs of its falsity."[4]

Dr. Landon Carter Gray, of this country, states that a delusion is a false belief. Then he says it is sometimes stated that a false belief of the insane differs from a false belief of the sane, because the former is fixed and not amenable to reason; but this is a mistake, because the former is not always fixed and unamenable, while the latter sometimes is. "The only definition of an insane delusion," he says, "is that it is a false belief occurring in an insane person. Whether or not a person is insane is a question of diagnosis."[5]

I must regard the view of Dr. Gray as rather dangerous for a student who is trying to find solid ground to stand upon. Of course, we all must agree that a delusion of the kind we are discussing, which is the delusion of an insane man, must be a false belief occurring in an insane person; that goes without saying, but the last part of Dr. Gray's sentence leads one to infer that it is not a most necessary and often vital factor in diagnosis, which can be made independently. Do not accept that position for a moment, for it is untenable. If there is one diagnostic mark in any disease, it is that of delusion in mental disease. With that well made out, there is some assurance that you are correct, without it there is a very good chance you have not gone to the bottom of the case. Dr. Gray's assertion is like saying: "The only definition of the lesion of diphtheria is that it is the Klebs-Löffler bacillus recurring in a diphtheritic patient, but whether or not a person has diphtheria is a question of diagnosis."

You will observe, in Clouston's definition, that care is taken to make it clear that a delusion is a belief which would be incredible to sane people of the same class, education or race. The reason of this is that sane people often entertain beliefs which are so strange, and erratic and false to the facts of life, that by themselves alone they might seem to be genuine insane delusions. Carefully investigated, however, they are seen to have a consistent connection with the expressed views, or actions, or conduct, or mode of life of those who hold them. Strange superstitions are usually mentioned as instances; also unusual religious views; eccentricities of conduct so unusual as to suggest mental unsoundness.

Insane delusions may grow out of exaggerated, extreme or over-wrought beliefs. Emotional people of sensitive, high-strung nature, liable to

1 Natural History of the Intellect, R. W. Emerson, p. 24
2 Clinical Lectures on Mental Diseases, T. S. Clouston, M.D., p. 189.
3 Handbook of Insanity, T. Kirchhoff, pp. 72, 73.
4 Practical Manual of Mental Medicine, E. Régis, p. 64.
5 Nervous and Mental Diseases, Landon Carter Gray, p. 587.

go to extremes, or ignorant people, also of the emotional kind and easily influenced, cannot, when sane, be regarded as well-balanced and under the strain of the trials of life, or ill-health, can easily pass over the narrow line which separates the sane from the insane. One can often trace the genesis of the delusion, as it is slowly evolved, and see from what it originated, in this particular class of cases, but it is necessary to be careful, and not label a delusion an insane one until fully evolved.

When once delusions are fully formed, they are no longer reasoned and speculated about, as is the case with insistent ideas. They are the very heart and essence of the *ego* itself. They are the new personality, which has taken the place of the old one, whatever that might have been, and it is from this new standpoint that the I, the *ego*, looks out and gazes on the world around him, and judges what shall be his attitude towards it. There is no longer any thought that he can be in the wrong, or that anything is unnatural about him. However depressed, sad, miserable, or exalted or happy he may be, he now sees things clearly in their true light exactly as they actually are. If any one disagrees with him, or tries to argue him out of his false beliefs, even if such a person is listened to, he is commiserated for his ignorance, shown that he cannot comprehend the true state of affairs, or is regarded as unbalanced himself.

The extraordinary hold that delusions have over the insane is illustrated by the way they treat each other in hospitals. Often they are quick to perceive each other's delusions, and in their mutual treatment are kind and forbearing, fully recognizing how much allowance must be made for people who are controlled by erratic notions and foolish ideas. They even will try to argue each other out of their delusions, and use much tact and skill in doing so. Frequently when I see how completely a person is held in bondage by his false beliefs, yet receptive of certain kinds of impressions; see him eating, dressing, working, amusing himself, precisely as do other people, yet in a world of his own which I cannot reach, I feel as if he were hypnotized; as if only one part of his brain was working, while the other portions slept. And so to some extent he is the victim of auto-suggestions, made so often, that as last they come to have an organized, living character. I am sometimes so much impressed by the patient's being in this hypnotic state, that I search persistently for clues to the suggestions which he has made to himself, to see if I cannot replace them by counter-suggestions to gradually offset them. I am not now speaking of hypnotism, to which I shall refer under the head of therapeutics, but simply of the substitution of suggestions in the mind of the patient.

It may help you, perhaps, to look at an insane person as if he were hypnotized. Think of his having some rather unusual false belief, such as that he is a teapot (Bucknill and Tuke), or made of butter (Régis), or has glass legs, or a snake in his stomach, or has a sponge in his head instead of a brain (Kirchhoff). Then picture to yourself what a man might say, do, and feel, if he had been hypnotized to believe such things, yet at the same time was obliged to conform to social requirements as far as was possible. It would seem as if the incongruity of the situation must make it impossible to play such a part, but it does not. The hypnotized person, as you all know, will do the most ridiculous things with calm and imperturbable gravity, for the reason that only one portion of his mind is alert and wide awake. The intelligence of the other portion, which under conditions would be active, is "switched off," as James says, and is temporarily dead. The power of comparing, which would at once reveal the absurdity of things, is held in abeyance, for only one portion of the *ego*, that interested in the special suggestion, or set of suggestions, asserts itself above the "threshold of consciousness." I would not say that the insane person and the hypnotized person are in a similar morbid condition, but there is a rather striking analogy in some ways between them, a knowledge of which will make you feel more familiar with mental disease.

There is danger that students may become impressed too much with the idea that delusions in mental disease stand out definite and clear cut, being limited to one special, specific subject. This is an error, which should be most carefully guarded against. There is hardly any man, however strong he may be mentally, who could keep any idea alone by itself for many minutes in the field of consciousness. By the association of ideas, others of an allied character spring up, and so even in the pursuit of one subject, there is an interchange and interplay of a multitude of ideas, though there is a continuity and system in their sequence. In the insane there is the same method of mental action, less orderly, more perverted, but following the general rule. Now, there may be one central false belief, as, for instance, in a case of melancholia, the committal of the unpardonable sin. But these words are merely the verbal expression of a tremendous emotional change that has taken place. The patient may have been growing depressed for months. First, it may have been simple morbid conscientiousness; then sorrow for the wrong things he had actually done; then sorrow for his sins of omission; a feeling he was bringing ruin on his family; a consciousness of wickedness; despair at the hopelessness of the future; certainty that he was eternally lost; and, finally, the committal of the unpardonable sin. The patient's mental state cannot be summed up by saying he has this particular delusion, but must include all the elements which combined together display the emotional disorder, as well as the purely psychical. The temperature is pathognomonic of ty-

phoid fever, this particular delusion of melancholia; yet in neither case are we giving more than one factor in the disease.

In mental disease, therefore, you may be sure you will find more than the single delusion, if you happen to have picked that out, as often you cannot. You will find a delusional state, characteristic of the disease, rather than a single delusion. The mind will be permeated, and often honeycombed, by ramifications of the false beliefs. Many things, perhaps most things, the patient does will be tinged by the character of his disease where he has a chance to act out his own personality with any freedom. In studying mental disease one is made strikingly aware of how little originality there is among average men. We are creatures of habit, the result of our close family and communal life. Even the insane, who more than any other class throw off the shackles and restraints of social convention, are kept in grooves and ruts, and as they wear clothes, fit themselves in after a fashion. Their docility and amenability (often they are much more managable than the sane), give the impression of adaptability, but underneath the surface will be found characteristic and consistent indications of the mental disease. The threads are all there, out of which we may with patience weave a diagnosis. To do this successfully we must bear in mind two things: (1) not to be disappointed if we do not discover the presence of a single well-defined delusion; (2) not to be surprised if the surface indications of the disease are not very noticeable.

The varieties of delusion are necessarily very numerous, depending both on the form of the disease and the country, race, surroundings and intelligence of the insane person. One writer enumerated fifty-two varieties of delusion he had noticed. While the innate character of the false belief may be of the same nature from one period of time to another, the outward way it expresses itself may change. For instance, those who have delusions of persecution often think they are visited in their rooms at night, for the purpose of being injured. Formerly, their rooms were violently broken into, or there was a trap-door in the floor through which the visitor entered. Later, electrical wires were carried to their rooms, and powerful shocks of electricity were administered. At present, they add the telephone to the electric batteries, and often receive threatening and terrible messages from their enemies. Even the phonograph is occasionally brought into requisition.

According to Ball and Ritti, delusions met with in mental disease may be divided into the following:

(1) Delusions of satisfaction, of grandeur, of riches.

(2) Delusions of humility, despair, ruin, culpability.

(3) Delusions of persecution.

(4) Hypochondriacal delusions.

(5) Religious delusions.

(6) Erotic delusions.

(7) Delusions of bodily transformation.[6]

The physical evolution of delusions in a subject on which we have little light; but as a prelude to the study of hallucinations, Kirchhoff's views are of interest:

"In patients," he says, "belonging to the most different classes, and in all parts of the world, we always find certain definite series of delusions in constant repetition. In many such, series of ideas persist throughout the entire course of the disease; they are called fundamental, or primordial. Like central hallucinations and imperative concepts, they either develop directly in the diseased brain, or are excited by slight external impressions, or by processes within the body. The latter factor requires some explanation. In ordinary health, but more frequently in morbid conditions, irradiated sensations in the body are often associated with irritations in the same, or other nerve tracts. For example, auditory impressions often produce sensations of light, or colors give rise to auditory impressions. In such cases of irradiation it can often be proved that the origins of the nerves lie adjacent to one another. In a similar way the development of certain delusions is connected with sensations located in adjacent parts of the brain. But as the expression in speech of these associated sensations always revolves within very narrow circles, the contents of the associated concepts are also limited by certain individual ideas and words, and these recur constantly in all individuals, after the same internal stimulus. This sheds light on the uniformity of so many delusions in different individuals. They must develop in certain anatomic tracts, and find expression only in general known terms of speech."[7]

Hallucinations have been defined by Clouston as "false beliefs in sense impressions." Dr. Stearns calls them "false perceptions." Griesinger defines them as "subjective sensorial images, which are, however, projected outward, and thereby become apparently objects and realities." Either one of these definitions is, in a way, a good one, and worthy of consideration. That of Clouston is simple, and easily remembered. The only criticism to be made of it is that it possibly in some cases might be applicable to delusion, as well as hallucination. Of course, a complete definition ought to stand clearly and definitely without qualification for the word or term it is intended to define, and for nothing else. It should not have two meanings.

Another criticism of almost any definition might be that it would make hallucinations appear to be the result of disturbed psychical processes on the one hand, or disturbed sensory ones alone on the other. At present it would appear to be the case that they are of mixed or

6 Practical Manual of Mental Medicine, E. Régis, p. 64.
7 Handbook of Insanity, B. T. Kirchhoff, p. 76.

psycho-sensorial origin, which admits in their production both a sensory and psychic element, Régis thinks there can be "no doubt of the physical element in the genesis of hallucination because of the finding of various lesions in the sensory organs involved, in their nerves, in the thalami, and corport striata, in sensory center f the cortex."

Twenty years ago hallucinations used to be defined as "errors of sensation," showing that at that time they were regarded as a physical rather than a psychical lesion. And in observing a patient where the hallucination is well marked the sensory anomaly is what chiefly impresses one, often to a degree to lead one to momentarily overlook the other symptoms of the disease. A patient will say, for instance, that he hears a voice on the other side of the door, when you are talking with him. He may be saying nothing in any way suggestive of mental disease; you suddenly notice that he begins to listen intently, then directs his attention toward the door, as if he heard something; finally, he walks toward it, and satisfies himself not only that he hears a voice, but taht it is, perhaps, the voice of his father.

What impressed me in this case was the perversion of the sensation of hearing. It seemed as if there must be some lesion in the auditory center which was at the bottom of the misinterpretation. It was hard to get away from this conclusion. Yet, on reasoning further, you will see that the sound of the voice grew out of nothing external. My voice was not mistaken for the father's (which would have been an illusion); no other sound of any kind was to be heard anywhere, so that there was no chance in that way for a mistake. Where, then, did the voice come from? We must answer, from the patient's own mind; in other words, it was a wholly subjective phenomenon. It was not only a voice, but the voice of a particular person; which further demonstrates the falseness of the perception. In this case, as in most others, it will be found that delusions are woven into the hallucinations, and practically give them their form and coloring—a proof of their pyschical character. The subject of this hallucination had many delusions concerning his father, about whom he was constantly talking, and always wanting to see; it was in keeping with the development of the disease that it should be his voice he heard. He might have heard his father talking from a longer distance, or from some unusual place, like the roof, but he was a quiet-mannered, dignified young man, and it was consistent with his character that he should not shout at his father, but talk to him from a point near by. Often in studying cases of mental disease you may be able to reconstruct the normal personality of patients from what you can see of their tendencies and peculiarities.

Clouston attempts to account for hallucinations in this way: "We may either suppose that, through morbid activity in the nutrition and energizing of the centers of sensation, those molecular changes, which each previous perception had left, are rendered more vivid, and more like the original, as when a photograph by the stereoscope is made to look real and solid; or through failure in the judging and comparing power of the brain, those faint images which we in health call memories, are actually mistaken for real perceptions of real impressions on the senses, just as when in a dim light, and dreaming humor, the pictures on the wall stand out as real men and women."[8]

"The voices heard are so natural, and the conviction of their existence so irresistible," as Régis says, "that very intelligent patients, physicians, and alienists, themselves will not suffer a doubt, and have recourse in explaining their existence to all kinds of incredible and absurd interpretations; for example, to the intervention of various forces, electricity, acoustic tubes, and phonograph, etc."[9]

There are as many species of hallucinations as there are senses, but there are numerous varieties. The chief kind is that of hearing, or auditory hallucinations. These generally take the form of voices talking directly to the patient. Their character depends on the nature of the case. If exaltation is present, they will be cheerful, agreeable, or grand and inspiring voices. They may even come from God, or the Virgin Mary. If depression is present, they will be gloomy, despondent, telling the patient of his wickedness, and commanding him not to eat, or drink. If the case is one of delusions of persecution, the voices will be of a threatening, or denunciatory character, and usually come from the enemy. They warn the patient of intended injury, perhaps of designs to kill him; and command him to kill first, as the only way of saving his life.

Hallucinations of hearing are not often of a pleasant nature, but rather of a painful one. They are particularly characteristic of the cases of persecutory disease, a point to which I wish especially to call your attention, as of medico-legal importance. Homicides committed by insane people are often done under the command of a voice, which is absolutely irresistible. Look most carefully for hallucinations of hearing when you examine an alleged insane murderer. He often will make no reference to any voice, or false hearing for various reasons, one of which, and the one that concerns us here, being that after he has obeyed the command of the voice, he hears it no more, and naturally, as you will perceive on reflection, for the deed was in the nature of an explosion, and its consummation is followed by a period of relief from the previous mental tension. Nothing is left for the present to be commanded. In trying to get your clue for the auditory hallucination, you may be

8 Clinical Lectures on Mental Diseases, T. S. Clouston, p. 139.
9 Practical Manual of Mental Medicine. E. Régis, p. 69.

told no more than: "He had to do it" (the murder)—"He was told to do it"—"It was a put-up job"—"He couldn't help it"—"He didn't have anything to do with it." All these statements carefully analyzed, will turn out to be remote references to the hallucination and should lead to further investigation.

False hearing is not limited to one voice, though as above said, it takes its character largely from the form of disease, and individuality of the patient. I had a patient, who heard in the house usually only one voice, but when he walked in the street he heard a great many. All the voices told him what a bad man he was, and purposed to generally expose him. Sometimes the voice is constantly active, keeping up a lively conversation, as in a patient I have, who at the same time carries on a rational conversation with me, and a less rational one with a voice located a little behind her, so that she has to turn her head a little, when trying to catch what it says. The voice generally says very much the same thing, so that she answers it rather mechanically. It tells her that everything she does is just right. and approves of what she wants to do, which makes her more difficult to manage, as she has many bad habits which have to be corrected. She sometimes thinks she is to be buried alive, which I think another voice tells her. The first voice, and her own seem to be limited to her own thoughts, one asking questions, the other answering—hence of psychical origin.

Auditory hallucinations have always been regarded as a very grave and practically hopeless symptom from a prognostic point of view,indicating that the disease has become organic. At present we should say a case in which they were found was serious, but not hopeless. This change in opinion is owing to our better knowledge of mental disease, and the discovery of such hallucinations in curable cases where we had not before noticed them.

Visual hallucinations are much less common than the above. They may occur in company with them or alone, perhaps generally alone. They are, of course, false perceptions of sight. Objects are seen which have only a subjective existence. A patient I had saw men at night who came to his room to carry him off to prison. He had no auditory hallucinations, therefore he explained their making no noise by saying they wore felt slippers. Objects seen may be ordinary persons, or the most exalted personages; or places, terrifying spectacles, pleasing sights. Things of a disagreeable nature are oftenest seen at night, and take the form of robbers, murderers, electrical machinery; in women, men who attempt to outrage them, etc. The prognosis where these hallucinations exist, I regard as serious in proportion to the degree they have become organized, but they do not usually indicate a form of mental disease dangerous to others, and are more curable than auditory hallucinations.

Tactile hallucinations, or false perceptions of touch, are not common. So far as my own observation goes they can be more directly attributed to physical causes than those mentioned above. They are often due to imperfect nutrition of the skin, and consequent irritation of the cutaneous terminal nerve filaments. They are perversions of cutaneous sensation, which are subjectively falsely interpreted. The patients feel things on the hands and skin, which may be skin disease or insects or filth. Out of these false perceptions (as it appears to me) sometimes grow the delusions of filth and contamination. The prognosis is not very favorable in these cases. They may recover after a time, or get better, but are very obstinate.

Hallucinations of taste and smell are also rare. They are false perceptions of these senses, and also lead one to regard them as arising in large part out of a physical background. In some cases taste and smell or either one, may be altogether abrogated. I remember one such case, a woman who became mildly depressed after the birth of her first child. She had so largely lost her sense of smell that violets and other flowers had no odor at all to her. Her sense of taste was blunted, but not wholly lost. As she began to get better, she gradually recovered both smell and taste. In health there are frequent perversions of these senses, as one easily discovers on making an investigation.

It is quite common for patients to think they have poison in their food. This idea may arise as a delusion in the mind of a diseased victim of persecution. But it may further develop into an hallucination, and the patient will see the arsenic put in his food, or taste it on his tongue as a fine powder. The hallucinations of smell take the form of perceiving horrible odors, such as sulphureted hydrogen, or ammonia, or some deadly and noxious gas. Occasionally, I have known a patient to suddenly turn around, and perhaps hold his nose. Being interrogated as to what was the matter, he has said, "he could not breathe there was such a stench." If these hallucinations are not well defined and are evanescent they have no serious prognostic import, but where they are very dominant, so that a patient becomes suspicious because of the poison he sees, or is all the time trying to escape from the noxious vapors, the disease has become or is becoming fixed, and the prognosis is therefore unfavorable.

In addition to the specific forms of hallucinations already spoken of there are others of a more general character, especially those which are referred to the genital organs, which are usually of a painful character, and occur in the persecutory form of mental disease. In conclusion, brief mention must be made of the third group of what I have called classical characteristics of insanity, namely, illusions.

Illusions are mistaken perceptions. The defini-

tion of Régis is: "The false interpretation of a perceived sensation." An hallucination is wholly subjective or invented; an illusion is a distortion, a sense deception. If we refer to the young man already spoken of who heard his father's voice on the other side of the door, you will remember we called his doing so an auditory hallucination because no voice was heard. But if some one proved to him not to be his father had actually spoken, and he had said, that is my father's voice, he would have been the subject of an auditory illusion. He insisted on it that much of the furniture in the room had come from his father's house, and was sure that the stable was his father's stable. These were illusions of sight, which are the most common kind.

Mistakes in identity also come under this head. The same young man recognized several people in the house as persons he had previously known, and even spoke to them and called them by name, yet he had never seen one of them before. Another patient addressed an unknown lady in a familiar way as his wife, and in spite of her protestations was satisfied of her identity. He also thought that he recognized her voice in the room over his head, and was sure when he heard the furniture being moved about, that she was being attacked and maltreated. These were auditory illusions.

Illusions of taste and smell are not uncommon. Salt and sugar are sometimes regarded as arsenic, strychnia and other poisons. Milk has the taste of poison. Egg-nogs are made of rotten eggs. Rare beef looks and tastes like human flesh. Any smell is like putrid flesh, or decaying matter, or sewer-gas.

Illusions of cutaneous sensation are occasionally met with, as in a patient with a dry and badly-nourished skin, who mistook the irritation and itching for insects which were crawling over her.

Illusions occur in both curable and incurable cases, and are not regarded as unfavorable indications in the prognosis. Uncombined with hallucinations, this is true; combined with them, the opposite is the case.

There has been much discussion as to the best time of the day for the performance of operations. In all cases in which much fear is present, the early morning hours should be selected, as, since the patient has slept, he will not be compelled to spend a great part of the day, hungry and alarmed, with each succeeding hour increasing his dread. Operations late in the afternoon possess the advantage that, as night soon comes on, the patients are more likely to fall asleep and spend a quiet night, yet we know that this result is often a problematic one, as post-operative restlessness and sometimes jactitation often prevent sleep for hours after operations.—*International Journal of Surgery.*

Book Reviews.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA. An Historical Outline. By Clara Marshall, M.D., Dean of the College. P. Blakiston, Son & Co., Philadelphia. 1897.

The Alumnæ of this college have cause to be proud of their Alma Mater; and probably the Alma Mater has cause to be proud of its Alumnæ:—as students appreciating the invaluable advantages laid before them, and in after professional life, doing careful and commendable work.

The book opens with this sentence: "The first college in the world regularly organized for the education of women for the medical profession was incorporated by Act of Assembly in Pennsylvania, approved March the eleventh, 1850, under title of the Female Medical College of Pennsylvania."[1] This was a great step in advance; though now, it might be asked, why were not the privileges of the immense wealth and resources of the various medical schools accorded to these few pioneer women, who were thus, with the most self-denying efforts, trying to prepare themselves to do efficiently this most important work? When in London in 1886, as I walked through St. Thomas' Hospital, St. Bartholomew's and St. George's, those magnificent, and richly endowed institutions, I thought of the few women physicians in that great city, and how those noble women had to find refuge in a miserable little tenement-house hospital! It was the same in Philadelphia in 1850. A separate college had to be established!—while there were empty seats, and empty benches in the great college halls of that city; but these few women could not have one little corner, or side aisle, that they might have the privilege of learning from the rich instructions of those eminent professors.

These women had no funds, so a good man, one of the original incorporators, purchased the unexpired lease of a building in the rear of 627 Arch Street, "reached only by a dark and narrow passage way from Arch Street near Seventh;" and in these "few inconspicuous rooms," on October 12th, 1850, the Woman's College was opened! Eight pupils matriculated! The history continues, giving an account of the many difficulties, the opposition from various sources, the discouragements, and the persecutions.

The author, as if to give relief, records the many positions of trust and honor to which the graduates of this school have been appointed. On page 84, commences the "List of the institutions in which the Alumnæ have received appointments, and of the various hospitals and dispensaries in which the students or graduates have had opportunities for clinical study." Though the list is quite extensive, covering five pages of the volume, and embracing about 135 institutions, yet it does not include all. One of the most important of these left out is "The Hospital for Women and Children, of Brooklyn, N. Y." This hospital was organized by one of the graduates of the Woman's Col-

1 "The title was in 1867 changed by decree of court to that of the 'Woman's Medical College of Pennsylvania.'"

lege in 1881, and it has done most excellent work. In connection with the work of this hospital has been proposed some new and valuable procedures in surgery, which procedures have been accepted by the medical profession; and there have been made a number of discoveries in pathology, which discoveries have been recognized by the scientists, both in this country and in Europe. In some of our latest, most valued, and standard works in this department of medicine, quotations have been made from the published reports of the work of this hospital, these discoveries referred to, and the plates reproduced that were used to illustrate certain pathological conditions of sick patients in this hospital.

A number of reports of the work of this hospital have been from time to time presented at the annual meetings of the Alumnæ Association. (See reports 1885-86-87-88-97.)

The author tells of the various improvements and advances made in the work of the college:—"In 1861, clinical opportunities were increased by the opening of the Woman's Hospital; in 1869, a progressive course of study was instituted; 1871, the college year was lengthened by the addition of a spring term; 1875, the new College building—the first in the world built expressly for the education of women in medicine; 1878, the number of beds in the Woman's Hospital was nearly doubled; 1880, a physiological laboratory was opened; 1880, the department of gynecology made a separate chair; 1881, three years' attendance upon a graded course of instruction; 1883, Clinic Hall was erected by the Hospital; 1893, a four years' course was made obligatory upon all students. 1895, a new building for the treatment of medical and surgical patients. One important event which seems to have been overlooked, is the establishment of a chemical laboratory, the first laboratory for practical work in this department ever formed in a woman's medical college. This was established by Professor Rachel Bodley, who was the first woman professor of chemistry.

One also wishes that in this "College Story"[2] a little space might have been given to an account of the formation of the microscopical laboratory for histology and pathology, by Dr. J. Gibbons Hunt. This was a first microscopical laboratory in any woman's medical college, and as Dr. Hunt said in his address: "Among all instruments of precision employed in our profession the microscope takes unchallenged precedence."

On page 67, the author gives some account of the "Woman's Medical Club," known as the Alumnæ Medical Society, stating that it was organized in 1890; that it holds monthly meeting and that every member of the club is required to take an active part in the presentation of papers and in the discussions. All this is most interesting; yet while mentioning this "Club," founded in 1890, it might have been well to have given some account of the organization of the Alumnæ Association of the College in 1875. The author simply states: (Page 68) "In 1875 an Alumnæ Association was formed, one of its express objects being the promotion of the interests of the college. It has from time to time made substantial contributions towards securing additional educational advantages for the students."

It is true, at the meeting of the Alumnæ in 1878, Dr. A. E. Tyng offered the resolution: "That the money remaining in the treasury at the end of each year be applied as a fund for the establishing of a library for the use of the graduates, and the students of the College." Dr. E. C. Keller of Boston, supplemented this by the following: "Resolved, That the money remaining in the treasury at the end of each year be equally divided for the library and for the fund of the education of the students." But these resolutions do not make securing contributions the express object of the Association, nor was it the way in which the Alumnæ Association could best promote the interests of the College.

At the meeting of organization of the Alumnæ Association, 1875, Dr. Emeline H. Cleveland, now deceased, was acting President. An address was made by Dr. Cleveland, and one by the writer of this review. The latter in her address proposed, and repeatedly emphasized, that the Alumnæ Association should be a medical society, that its great work was the promotion of medical science, and the encouragement and help of the Alumnæ in their work; and that at the annual meetings, the Alumnæ should present reports of their practice, and of their scientific researches. The next day at the adjourned meeting, the writer presented the following motion: "Resolved, That the Alumnæ be invited to present at each meeting papers on various subjects of interest connected with medical science." This resolution was adopted, and at the next meeting, October 3, 1876, five papers on medical subjects were presented, and six or seven interesting cases reported by as many Alumnæ. So at each succeeding meeting, of the Association, most interesting papers have been presented. The outlines of these papers, in some of the annual reports, covering as many as seventy-seven pages, really making of the report, a medical journal. In 1895 there were 127 pages devoted to medical papers and medical reports.

In the annual report of the Alumnæ Association of 1895, an address is given by Dr. Mary Putnam Jacobi in which she says: "The main business of the Association is the discussion of medical subjects . . . " "Papers should be the fundamental reason for our coming together." "It seems to me that this is the object of the Association." (See P. 23.)

On page 89, the author gives a list of the titles of medical papers written by the Alumnæ of the Woman's Medical College of Pennsylvania prior to January 1st, 1897. This list covers fifty-four pages of the volume.

The author continues: "The history of this College would be incomplete without some account of the struggles of its professors and Alumnæ, resident in Philadelphia, for professional recognition in the city and state." She then recounts a number of instances of the Alumnæ being refused admission into medical societies, and gives various data. This subject covers 26½ pages.

2 "College Story," an address by Prof. Bodley to the graduating class, March 17, 1881.

In all this apparent opposition, in all these strong resolutions, against the entrance of women in medical fields we see an element of chivalry and kindly consideration. It must also be borne in mind that at this time, women physicians were an uncertain quantity in the medical profession. Indian said, "White man is very uncertain," white woman more so.

Still these good men lost sight of two or three little points. First, That women, in their household labors, sometimes have the heaviest burdens, far more trying, and laborious than the *most exacting* duties in the practice of medicine. Secondly, Many women have no households, no husbands, and no strong hands to care for and protect them, and no little babies to comfort and make them happy. Some, to win a meagre daily subsistence, have only the washtub, the needle, or heavier duties. Third, There is nothing that ever was, or ever can be in the medical profession, sufficiently bright or dazzling to make women forget their little ones. Women are women, whether they be physicians, day laborers, students, or queens in their palaces; they all alike love their homes and love to care for their children.

As to medical societies: In these latter days, it is well to recollect, that an unfriendly member, from envy, jealousy or malice, may for years, under various pretexts, keep out of a medical society, a most worthy applicant, and an applicant who may be in every respect better, more deserving, and more capable, than the very member or members who oppose.

Finally, there is another point for us to consider:—If women physicians could then have changed places with the men, would they have been more generous, more kind, or more gracious? If women physicians had then held the fort, would they not have been quite, or even more exclusive; probably, not even have listened to the repeated requests, and applications, or have taken the trouble to have made "resolutions" and "manifestos," but only more tightly have closed the doors! I do not believe women physicians would have been more generous, more fair or more yielding.

A little summary, as given by the author, "of the struggles of its professors and Alumnæ, resident in Philadelphia, for professional recognition in the city and state." "At an adjourned meeting of the Philadelphia County Medical Society, held Nov. 10th, 1858, certain resolutions previously presented for consideration were referred to, as follows: "The censors respectfully report that they would recommend the members of the regular profession to withhold from the faculties, and graduates of female medical colleges all countenance and support, and that they cannot, consistently with sound medical ethics, consult or hold professional medical intercourse with their professors or alumnæ.

"This action being sustained by the state medical society," an appeal was sent to that body, June 8, 1866, signed by the President and secretary of the Board of Corporators, and by the Dean and Secretary of the faculty. In 1867 a second appeal sent by the college to the society, was "laid on the table." During this same year the Philadelphia County Society issued a manifesto ending with the following: "Moved by these considerations, be it

"Resolved, that in conformity with what they believe to be due the profession, the community in general, and the female portion of it in particular, the members of this society cannot encourage women to become practitioners of medicine, nor, on these grounds can they consent to meet in consultation such practitioners."

To this manifesto, Dr. Ann Preston, Dean of the College, wrote a most able reply of eight pages, given on page 45 of the volume, and which appeared in THE MEDICAL AND SURGICAL REPORTER of May 4, 1867.

The publishers of this book, Messrs. P. Blakiston, Son & Co., have done their work most excellently.

MARY A. DIXON-JONES, M.D.

Formulæ.

For Conjunctivitis.

℞ Acid boric, c. p..... grs. 12
Sodi chloridi..... grs. 4
Aqua camph..... ʒ i to 2
Aqua rosæ, qs. ad..... ℥ i m

Instruct the patient to instill into the eyes two or three drops every half hour to six hours, according to the amount of discharge and congestion of the conjunctiva.

When the case does not yield to mild treatment he uses the following:

℞ Zinc. sulph..... gr. ¼ to ½
Ammoni. mur..... gr. ¼ to ½
Aq. menth. pip..... ʒ i to 2
Aq. rosæ, qs. ad..... ℥ i m

Put two or three drops in eyes two or three times daily. Should this not prove effective, evert the lids and brush the whole conjunctival sac about twice or thrice weekly with a solution of silver nitrate, ½ grain to the ounce of distilled water.—WAKEFIELD.

Pigment Spots.

℞ Hydrarg bichlorid..... 0.5
White of egg..... 0.1
Sacchari..... 15.0
Succ. citr. 30.0
Aq. destill 150.0

M. D. S.—To be applied in the morning and allowed to dry.—MEDIC.

Silver Nitrate in the Persistent Diarrhea of Children.

℞ Silver nitrate..... 1 grain
Dilute nitric acid ..... 5 drops
Mucilage of acacia.....
Syrup of orange peel..... aa 4 drachms

S. A teaspoonful every three or four hours.—*Pediatrics.*

Local Anesthetic.

℞ Orthoform, pulv..... 2.0-4.0
Lanolin..... 15.0
Vaselin..... 5.0

Mft. Ungt. D. S.—For external use in rhagades, ulcerations, burns of all degrees.—*Munch. Med. Woch.*

Fissure of the Tongue.

℞ Acid carbol 1.5
Tinct. iod. 5.0
Glycerine 15.0
M. D. S.—For local application with a camel's hair brush.—*Monatsh St. Dermatol.*

Ointment for Acute Articular Rheumatism.

℞ Vaseline ..... 25 parts
Salicylic acid ..... 4 parts
Sodium salicyclate..... 3 parts
Extract of belladonna..... 1 part
To be applied and covered with cotton. — *Lemoine Nord.*

For Gastric Ulcer.

℞ Codein. phosph.,
Ext. belladonnæ,.....aa gr. v
Bismuthi carb., ... gr. l
Lactose ..... ℥ j. M.
Ft. chart. xv.
SIG.—Take two or three powders daily.—*Leube, Med. News.*

For Melancholia.

℞ Zinci valerianas,
Ferri valerianas,
Quininæ valerianas, aa ℥ ss. M.
Ft. massa et in pil. xxx div.
SIG.—One pill to be taken three times daily.—WILSON, *Med. News.*

For the Removal of Superfluous Hair.

℞ Tinct. iodi ..... 3 parts
Ol. terebinth. ..... 6 parts
Ol. ricini ..... 8 parts
Spiritus ..... 48 parts
Collodii ..... 100 parts M.
SIG. The affected part is to be painted with this mixture once daily for three or four successive days.
When the collodion scab is removed the hairs will be found imbedded on its lower surface.—PUTTE.

Typhoid Fever.

℞ Creosote carbonate ..... ℥ xix
Thymol ..... ℥ vj
Menthol ..... ℥ iij
Eucalyptol ..... ℥ viss
Alcohol, commercial, q. s. ad ℥ viij M.
Ft. solutio.
SIG.—This is stock solution.—T. W. SIMMONS, VIRGINIA *Med. Semi-Monthly.*
To make an emulsion from the above, in order to facilitate administration, use:
℞ Solution creosote carbonate compound ℥ v
Powdered gum arabic ..... ℥ iss
Pure water ..... ℥ iv. M.
SIG.—One teaspoonful every three hours in a wineglass of water, followed by a drink of water.

A Diuretic Pill in Dropsy of Cardiac Origin.

℞ Scillæ pulv.,
Digitalis pulv.,
Caffeina citrata, aa gr. xxx
Hydrarg. chloridi mitis, gr. v. M.
Divid. in pil. xxx.
SIG.—One three times a day, after meals.

Chronic Rheumatism.

℞ Liq. potass. arsen..... ℥ ij.
Potass. iodid..... ℥ ij.
Syr. simp..... ℥ iij.
M. S. ℥ i. t.i.d. p.c. in water.
—DA COSTA.

Amygdalitis.

℞ Sodii benzoat..... ℥ i. to ℥ iv
Glycerini,
Elix. calisayæ.....aa ℥ i.
M. S. Teaspoonful every hour or two.
—STEVENS.

Acute Gastritis.

℞ Vin. ipecac.,
Tr. nuc.vom.....aa ℥i
M. S. Two drops in water every two hours.
—PEPPER.

Neuralgia.

℞ Acid. osmic..... 0. 10 cgm.
Aq. dest..... 6 gm.
Glycerini..... 4 gm.
M. S. Inject 0.01 cgm.
—CHAPIRO.

Eczema of the External Auditory Canal.

℞ Acid. phos. dil..... ℥ iv.
Tr. ferri perchlor..... ℥ ij.
Syr. limonis.....℥ iij.
M. S. Teaspoonful in wineglass of water after meals.
Aloin comp. pills, one-tenth grain, night and morning, to relieve the constipation.
℞ Acid. carbol. pur..... gr. xx.
Ung. zinc. ox. benz..... ℥ i.
M. S. Apply.
Begin the local treatment by cleansing the ears with this ointment spread upon cotton on the applicator, then make a free application of the same ointment. No fluids, soap, or water must be used, as they nearly always prove deleterious.—DR. J. W. MAY, *Kansas Medical Journal.*

Scarlatina.

Begin treatment with the administration of calomel; then give throughout the disease:
℞ Chloral..... gr. xxx.
Syr. lactucarii,
Aquæ.....aa ℥ ss.—℥ i.
M. S. Teaspoonful in ice water every two or three hours.
Complete narcotism should never be attained.
—WILSON, *Polyclinic.*

Catarrhal Pneumonia.

℞ Ammon. carb..... gr. xxiv.
Syr. tolu..... ℥ vi.
Spt. vini gal..... ℥ iij.
Syr. senegæ..... ℥ iiiss.
Syr. acaciæ.....q. s. ad ℥ iij.
M. S. Teaspoonful every two hours for a child of two or three years.
—GOODHART *and* STARR.

Mental Depression in Diseases of the Pelvic Organ.

℞ Strych. sulph..... gr. 1-24.
Quininæ sulph..... gr. iss.
Ext. hyoscyami..... gr. iss.
Ferri redacti..... gr. i.
M. For one pill. S. One pill three times a day.
—TALLY.

Malnutrition in Infants.

℞ Ol. olivæ..... ℥ ij.
Glycerini..... ℥ i.
Vitelli ovi..... No. i.
M. et ft. emulsio et adde
Creosoti..... m xvi.
S. Teaspoonful t. i. d. after feeding.
—*Practitioner.*

Periscope.

OBSTETRICS.

Fatal Inversion of Uterus in Labor.—Kreitmair (*Munch. med. Woch.*) was called into a labor case where the patient was a primipara, aged twenty-two. The pains lasted about twelve hours, then became weak; flooding set in, yet the child was expelled spontaneously. The cord was twisted twice round its neck. A quarter of an hour later flooding again occurred. The midwife could not detect the fundus above the pubes, and could press the parietes against the promontory. A mass was found protruding from the vulva; the midwife took it for the head of a second child. The flooding became severe. Kreitmair did not arrive till one hour after it had set in, and the patient was then pulseless, restless, and almost delirious. He detected the inversion at once, removed the placenta, and reduced the uterus with the aid of a colleague. The patient died within two hours; subcutaneous saline injections proved useless. The shortness of the twisted cord was the primary cause of the accident, but Kreitmair suspects that the midwife pressed on the atonic uterus when the post-partum hemorrhage set in (she admitted "gentle friction"), and made a partial inversion complete.

Cocain in the Intractable Vomiting of Pregnancy.—A. Pozzi reports (*Arch. d' Ost. e Gyn.*) that at the Obstetrical Clinic at Turin five cases of pregnant vomiting which persisted in spite of the hypodermic injection of morphin and the internal administration of cocain were rapidly cured by Tibone by subcutaneous injections of 0.01 g. of the cocain hydrochlorate in the epigastrium, repeated once or twice a day before meals. Food was retained, and neither pulse, respiration, nor temperature was injuriously affected. The general condition gradually improved, the patients gained weight, and the vomiting did not return when the injections were omitted. Pozzi suggests that this treatment may prove useful in other forms of vomiting.

Babeau (*Journ. de Med. et de Chir. Prat.*) writes of a healthy young woman, temperate, and exposed to no unhealthy external conditions, whose milk seemed poisonous. She has been three times pregnant, and always carried her child to term. None of her three children could be suckled, as severe vomiting set in whenever it took the breast. No medicine checked the gastric irritation, but directly it was fed with good milk from a bottle or suckled by another woman, the trouble ceased and the child thrived. All other infants put to breast by the same patient were at once attacked with vomiting. She, it must be remembered, sought to be a wet nurse, though, of course, she was speedily found unfit for that vocation. The milk was examined. It was found to contain a great excess of albumens, especially lacto-albumen and lacto-protein.

Labor in primiparae married for some years and relatively mature, is considered by De Koninck (*Brit. Med. Jour.*). De Koninck gives thirty as the earliest year coming under "maturity," the "primipares agées" of French authorities. He sets aside as curiosities certain cases of primiparæ almost "aged" in the English sense of the term, such as Cohnstein's two women aged 50 and Steinmann's woman aged 52. It appears that in a genuine uncomplicated case of delayed impregnation the advent of the catamenia is always found to have occurred late in youth. Out of 401 such cases menstruation was retarded till 20 in thirty-nine, till 24 in four, and till 26 in one. As to the retarded first pregnancy, abortion, ectopic gestation, twins, and special renal mischief are relatively frequent. Above all, lingering labor is specially common, statistics even exceeding guesses and *a priori* reasoning in this respect. In twelve out of seventeen noted by De Koninck, labor lasted from forty to fifty hours, the remaining labors being yet longer; one exceeded ninety hours. Feebleness of uterine contraction is absolute from first to last, and independent of any obstetrical combination. They also cause far more physical and mental exhaustion than the vigorous contractions of a young uterus, and at the same time are more painful. There are discrepancies in the "pains" seen in mature primiparæ of the same age, probably homologous with the great variations in the age of menopause observed in otherwise normal women. The uterus may be older in one woman aged 35 than in another of the same age. The forceps and other obstetrical operations are often required in the mature. Most of the above facts are easily explained. The excess of male infants borne by mature primiparæ (30 per cent.) is a less explicable phenomenon. Hecker considers the predominance of male infants as a speciality of all primiparæ, but Rumpe turns attention to the fact that in a family of children the predominance of males is commoner the further the mother is from her first menstrual period.

One of the chief aims of **treatment in cases of endometritis** is to employ measures which will contract the distended vessels in the mucous membrane of the uterus, to re-establish normal circulatory conditions, and thus favor the absorption of exudates in the tissues. These cases often come under the observation of the general practitioner at a time when a cure can be accomplished by efficient topical medication, without the necessity of resorting later to curetting or the application of caustic application to the uterine mucosa. Formerly, medicated vaginal tampons were much employed for this purpose, but recently a more convenient, agreeable and serviceable means has been presented to the profession in the form of a wafer. Micajah's medicated uterine wafers combine all the advantages of the medicated tampon with a number of special properties. They are much more readily applied than the tampon, so that part of the treatment can be intrusted to the patient; and their application is therefore to be preferred both on the score of cleanliness and convenience. Aside from these obvious advantages, however, they are composed of ingredients, all of which exert an antiseptic, alterative, and healing effect upon the inflamed uterine mucous membrane. Under their continued use the congestion gradually subsides; the engorged vessels assume their normal caliber; the mucous secretions disappear, and exudates are absorbed. But even in cases where the process is so far advanced that operative measures are called for, the wafers will be found an extremely valuable adjunct in the treatment.—*Texas Med. News.*

Obstetrics Versus Gynecology.—The more obstetrics advances the narrower becomes the sphere of the gynecologist, and it may well be said that the obstetrician of the future will be the best gynecologist, for he will practice the latter specially by prophylaxis. —*Journal of Obstetrics.*

Rest in Nephrectomy.—The most important thing to do for any patient who is suffering from mild or severe acute inflammation of the kidney is to insist upon absolute rest, the patient remaining in bed not only for the rest, but also in order that the surface of the body may be protected from draughts and colds.—*Therapeutic Gazette.*

GYNECOLOGY.

NEUGEBAUER (*Breslau: Preuss und Junger*, 1897) has prepared a special work on 550 cases of **foreign bodies in the uterus,** which he has collected and classified. Of true foreign bodies sixty-three authentic cases are enumerated, and these included rings, needles and pins, pessaries of all forms and sizes, reels, and yet more remarkable structures; thus in one instance half a pound of hair was withdrawn from the uterus. In another case a leech was found in the uterine cavity. Neugebauer makes out a second class from parasites, a lumbricus in three, and ecchinocci in five cases. Then he describes the results of entry of foreign bodies through perforations in the uterine wall. Under that category are included bodies not foreign to the organism, but simply foreign to the uterus, such as feces, pieces of ovarian tumors, and pus from elsewhere. One utero-rectal fistula is noted, and stranger still one utero-gastric fistula (Duparcque). In the necropsy of a woman who died with utero-colic fistula during pregnancy, the left arm of the fetus was found engaged up to the shoulder in the fistulous tract. Coming to operative accidents, Neugebauer records three cases where the small intestine entered the uterine cavity through surgical wounds. No fewer than fifty-six cases of uterine calculi are noted. Dermoid tumors, retained products of gestation, and the fetus in missed labor, are included as physiologically foreign bodies.

G. H. Mallet (*Am. Gyn. and Obstet. Jour.*) does not attempt to enumerate the many disorders of the nervous, circulatory, or digestive systems, skin-eruptions, etc., **occurring as symptoms of the menopause,** confining his observations to those symptoms of greatest importance—hemorrhage and leucorrheal discharge, the latter in many cases causing vaginitis and pruritus. It is a popular belief that the monthly period may be more profuse and continue for several days longer than formerly, and may even appear between times, and that leucorrhea at this time is of no importance, that all will be well when the change of life is completed. This is often a fatal error. The rule should be that in every case where a woman, during the menopause, loses an unusual quantity of blood a local examination should be made, and with rare exceptions, the cause will be found. To determine what is the normal amount, a careful study of the previous history of each individual case should be made. Over six days of a free flow should awaken suspicion, and, if repeated, should demand an examination—as should a flow that recurs in twenty-one days, when the interval was formerly longer. One of the most important symptoms of the local pathologic conditions, is that of a slight hemorrhage following coition or the use of the vaginal syringe. In many cases of carcinoma this was the first symptom observed, and in one case the only suspicious symptom. A profuse leucorrhea should not be looked upon as physiologic, until a local examination has shown that it is not dependent upon a local lesion; for this discharge may indicate an inflammation of the endometrium, which, if neglected, may become something more serious. Discharges of a watery consistency should make one suspicious of carcinoma. Irregularity of menstruation continuing over three years is also a suspicious sign, the local lesion found otherwise indicating either a fibroid, polypus, retroversion, an endometritis, or appendagal inflammation. In seeking local causes for the symptoms that occur during the menopause, the size of the uterus has been the most valuable guide. Brief mention is also made of those troublesome and distressing symptoms of the menopause dependent upon vaso-motor disturbances; flushes, sensations of heat, accompanied by irregularity of the heart and palpitation, fulness of the head, pricking sensations, etc., were found more pronounced in those patients whose menopause had followed operative procedure.—*Am. Med. Surg. Bull.*

Abdominal Incisions.—Woolsey (*Annals of Surgery*, January, 1898) concludes that: (1) Abdominal incisions, except those in or close to the median line, should be obliquely transverse in order to run parallel to the nerves (and thereby also to the cleavage lines of the skin) so as to avoid partial paralysis of the muscles, weakness of the abdominal wall, and a tendency to hernia; (2) intermuscular, or even transmuscular, incisions should be preferred to those in the linea alba or semi-lunaris, for in both the latter cases the cicatrix is less strong and more prone to hernia, and in the semilunar line the nerves are necessarily divided; (3) in place of the median vertical incision the intermuscular incision near the inner margin of the rectus, or a "trap door" incision around this inner margin offers many important advantages.

SURGERY.

Dr. W. L. Estes, in an article on **the treatment of fractures,** in the *Internat. Jour. of Surgery*, says:

1. Unless a fragment is threatening to break through the skin the fracture should never be reduced except by the physician, and then only when apparatus is at hand to keep the parts in permanent apposition.

2. Men carrying an injured person should not keep step, as the jar to the wounded part is much greater.

3. Strychnia for shock, morphia for pain, but no alcohol.

4. Always give anesthetics for reduction of a simple fracture. It is better and easier to reduce and set compound fractures without anesthesia.

5. It is very rarely necessary to make a patient go through the double agony of temporary and permanent setting of the broken bones.

6. In simple fracture gentle rubbing of the ends will assist in getting rid of shreds of tissue which invariably are caught there.

7. Nowadays a surgeon will rarely be satisfied that a bone is properly set, until verified by the X-Rays.

8. Plastic splints, preferably plaster-of-paris, are surely the best apparatus when they can be applied.

9. Ambulant treatment is coming more into vogue. No simple fractures require constant confinement to bed, except of the innominata and upper third of the femur.

10. It is not necessary and is sometimes very harmful to wait for swelling to disappear before putting on a permanent dressing.

11. A well-applied splint with good apposition of fragments should not be removed too early. It is not necessary to apply massage early in ordinary cases.

12. Proper time for massage is two or three weeks after fracture of upper extremities and four or five weeks for lower extremities—if the bones are slow to unite firmly.

Dr. H. Riggenbach (*Deutsch Ztschr. f. Chir.*, 1897, xlvii., 33) gives an extensive and detailed article on **the relation which bacteria hold to ordinary accidental wounds.** The results arrived at from some twenty-six experiments are summarized as follows:

1. Accidental wounds of the surface of the body contain large numbers of bacteria.

2. Among these bacteria are found most of the pathogenic forms, i. e., those capable of causing infection of the wound.

3. The bacteria are found on the surface of the body, and are either brought into the wound by the inflicting instrument, or else they grow from the skin-surfaces into the secretions coming from the wound.

4. The development of the bacteria is in direct ra-

tio with the time which elapses before the patient comes under proper treatment.

5. The antiseptic treatment is more efficient in killing the bacteria than the aseptic, and therefore is better fitted for use in accidental wounds.—*Am. Med. Surg. Bull.*

Dr. Tuttle concludes his article on **cancer of the rectum** (*Jour. Amer. Med. Asso.*) as follows:

1. Cancer of the rectum can be cured in over 10 per cent. of the cases.

2. The mortality from the radical operation, though still considerable, is not alarming, and is decreasing with every year's experience.

3. The radical operation prolongs life on the average over 100 per cent.

4. As a palliative measure, excision is far more successful than any other measure.

5. The sequences, though numerous, are not at all intolerable and should weigh little in our consideration when it is a question of so serious a disorder as cancer of the rectum.

Operations about the nose and mouth are much more comfortably performed if the patient's head is allowed to hang in the hyperextended position over the end of the table. The sight for an onlooker is a rather horrifying one because the blood runs over the patient's eyes and forehead and over his head, making indeed a gory spectacle, but no blood will enter the larynx and little, if any, will be swallowed, so that the annoying post-operative, nausea, with the vomiting of large quantities of blood, is in great measure avoided. —*Ry. Surgeon.*

Dr. J. B. Murphy, of Chicago, contributes to the *Medical Record* a paper on **the technic of arterial suture.** He summarizes as follows:

For convenience I will divide these experiments on the arteries into four classes: (1) Longitudinal incision; (2) transverse or irregular wounds involving not more than one-third of the circumference of the artery; (3) transverse sutures involving more than one-half of the circumference of the artery; (4) complete division and resection of the artery not exceeding three-fourths of an inch.

The points to be considered in the technic are: (1) Complete asepsis; (2) exposure of the vessel with as little injury as possible; (3) temporary suppression of the blood current; (4) control of the vessel while applying the suture; (5) accurate approximation of the walls; (6) perfect hemostasis by pressure after the clamps are taken off; and (7) toilet of the wound.

The arterial wall and its endothelium are products of the mesoblast the same as the peritoneum, and react excessively to irritation, but much more slowly than the peritoneum. Infection must be assiduously avoided, as we have not only the regenerative action of the vessel walls interrupted, but also the action of the cellular elements of the blood forming a thrombus in their efforts to prevent the admission and advancement of sepsis in the vessel. If we have a suppuration outside the wall of the vessel, we may have a penetration of the infection to the inner wall and a thrombosis, failure of union from infection, or necrosis of the vessel when it is exposed to the action of the pus germs.

The vessel wall should be thoroughly exposed and the field prepared. The loose connective tissue should be freed with scissors and dissecting forceps for the required distance above and below the site of operation. If the operation be for a dissecting aneurysm, it is well to expose the vessel above and below the tumor so as to control the hemorrhage; then open the aneurysmal sac, remove the clot, expose the injured wall of the vessel, freshen the edges of the wound, and suture.

Straus publishes an interesting article on **primary tuberculosis of the rectum** in *Mathews' Quarterly Medical Journal.* He reaches the following conclusions:

1. That primary tuberculosis of the rectum is not so infrequent as some of the leading authorities have taught.

2. That it is a surgical disease as much as is appendicitis.

3. That it is not and cannot be diagnosed by the clinical symptoms as given by the various writers on diseases of the rectum.

4. That the only scientific and correct way of making a diagnosis is by the use of the microscope.

5. That by thorough curetment or excision, or both together, with cautery, it is not only cured but remains cured much more often than is dreamed of; certainly more often than the teaching of the authorities would have us believe.

6. That some of the apparently most hopeless cases are cured by repeated operations.

7. That all suspicious cases should be submitted for microscopic examination, for the reason that it is the only scientific method or arriving at a diagnosis.

8. That local treatment is not equal to curing these cases; permanent results are to be had by a radical destruction of diseased tissue or the habitat of the tubercle bacilli.

9. That these cases are and have been cured, and that sufficient time has elapsed for us to conclude that they will remain cured.

10. That early and repeated operations if need be are imperative, if these cases are to be permanently cured.

When you advise a patient to wear a suspensory bandage, tell him to get the kind which has straps running from the posterior band of the bag itself, around the legs or buttocks. The suspensories which are attached to the belt in front alone, with an elastic in the back edge of the bag, are useless.—*Int. Jour. of Surg.*

Parker Syms (*N. Y. Medical Journal*) says **bunions are caused by shoes which are faulty in shape or are ill-fitting.** In this class are: First, shoes with narrow points, with the point in the median line; second, shoes that are too short; third, shoes that are so loose at the instep as to allow the foot to ride forward, and thus bring direct backward pressure on the toes; fourth, the worst of all, are shoes that combine two or all of these defects.

This deformity has been ascribed to osteoarthritis, to suppurative arthritis, to rheumatism, and to gout; but bad shoes are its cause, and the arthritis is the result of the displacement they produce and of the injury they do to the joint.

The condition will vary a good deal in different instances. In mild cases there is but slight deflection of the toe outward, and little or no dislocation. From this stage or degree on the increased deformity is owing rather to pathologic changes than to mechanical conditions. A chronic arthritis is established. The internal lateral ligament is stretched, the external one is contracted. The joint surfaces may become eroded or eburnated. The weakened support finally allows complete dislocation, so that the toe will lie at an angle, perhaps a right angle, across its fellows. The tendons will of course become displaced. Some surgeons have made the mistake of considering the displaced sesamoid bones (in the tendons of the flexor brevis) as the cause of the trouble and not as one of the results.

In operating he makes an incision about an inch in

length on the dorsum of the toe. In a mild case, after retracting the tendon of the extensor proprious pollicis outward, he chisels off all the overprominent portion of the inner side of the head of the metatarsal bone removing as much bone as is necessary to do away with all protuberance; he then sutures the wound and lets it heal under one dressing. Usually the patient can walk about after the first week.

In more severe cases where there is a marked abduction as well as lateral dislocation, Syms removes the head of the metatarsal with a chisel or bone forceps, and also cuts off the prominent inner side of that bone. To resect the head of the metatarsal bone it will be necessary to divide the lateral ligaments and completely dislocate the toe. This can be done with ease and satisfaction through the simple straight incision described. It is necessary to remove so much bone that the toe will readily come into place and have no tendency to displacement. If this is not accomplished by the first ablation more bone must be removed.

The dressing must be carefully done and close attention given to the after treatment, which should include the application of a plaster splint. The writer advises never to operate during an acute attack of inflammation; always treat the deformity and never operate on the bursa for it will take care of itself after its cause is removed—the exceptions to this rule are the removal of callosities from the bursa when they exist, and the incision of bursæ when they suppurate; never to make the operation incision around or through the bursa.—*Medicine.*

SURGICAL HINTS.

When you operate tor appendicitis be sure that the patient's bladder is empty, and, if the incision must be a low one, explore well by sight and touch so that an accidental vesical injury may be avoided.

In clean, granulating wounds, a dry dressing will diminish discharge and stimulate cicatrization; but if there are sloughing areas or patches, or if the granulations are not perfectly red and clean, a wet or an oily dressing is to be preferred.

When deciding which anesthetic you will use in a given case do not lose sight of the fact that there are other methods of painless operating than by chloroform or ether narcosis. Many major surgical operations may be performed with the aid of local anesthetics, which avoid post-operative shock as well as certain unwelcome pulmonary or renal complications.

When acute sepsis threatens the life of a patient remember that it is your first duty to get rid of the infecting focus, even if in accomplishing this end you must sacrifice important structures. If it is your honest opinion that your patient's life is in danger, act promptly. "Operation a success; patient dead," is an old reproach to surgery; but not so grave a one as: "Patient dead; operation might have saved him."

When changing surgical wound dressings it is best to avoid, so far as possible, the handling of the soiled materials. Do as much as you can with the help of the dressing forceps, and keep your fingers unsoiled by pus or other discharges. This precaution is a wise one, not only for your own sake, but for the sake of the next patient who may require your services.

The conditions which call for tracheotomy are usually so serious and so rapidly progressive that one should lose as little time as possible in answering a call where this operation may have to be performed. It is therefore well to have the instruments which are required for such cases ready and packed at all times. These instruments should not be used for other operations, and they should be kept in a washable bag and the entire outfit should be thoroughly cleansed and sterilized immediately after each operation.—*Int. Jour. of Surg.*

Cocain as a Local Anesthetic.—If the solution of this salt is warmed before using (*Medical Age*), its anesthetic effect is more rapid, more intense and more permanent.

Menthol Collodion for Contusions.—The *Jour. de M. de P.* says this is recommended by Professor Name to soothe pain and accelerate recovery. After rigorous antisepsis and cleansing of the contused parts with ether, they are painted once or twice a day with a mixture of twenty-four to twenty-seven grams of collodion with six to eight grams of menthol.

Dr. DeForest Willard (*Philadelphia Med. Jour.*) says that one of the most common **errors of diagnosis in orthopedic practice** consists in ascribing to "rheumatism" the inception of most serious joint-disease. In rheumatism the symptoms are acute and active. There are sudden onset, local heat, rise of temperature, visible fever, evident swelling, and usually more than one joint involved. In chronic tuberculous cases the onset is slow, and there is entire absence of the signs mentioned. He concludes with the following rules for reference:

1. Discard all idea of rheumatism of a single joint in children (especially in the hip) unless it is positively proven by acute symptoms. Tuberculous disease is much more probable.
2. Any child may have local tuberculosis of a joint, no matter what its ancestry; heredity signifies only degree of resistance.
3. Do not attribute to "habit" a persistent limp. An inflammatory or paralytic cause is more probable.
4. All persistently fretful infants (especially those that cry when moved) should be carefully examined for evidences of spinal spondylitis. Older children, with stubborn irritation of the lung, stomach or intestine, should also be critically examined. Early diagnosis and treatment will accomplish excellent results.
5. In lateral curvature of the spine the indiscriminate and unskillful use of mechanical appliances does harm, while to neglect these means of fixation in spinal caries is ruinous.
6. To "let alone" a curable congenital bone-deformity after the first week of life is to lose the golden opportunity for cure.

I believe that when it comes squarely to the consciousness of the general practitioner that modern surgery in the hands of experienced operators can cure seventy acute cases of suppurative appendicitis in succession, without selection of cases, all other methods of treatment must be abandoned. And when it is further stated that the average time of confinement to the bed is less than three weeks, all room for discussion seems to vanish.—*Bernays.*

All that we are justified in saying at present on the subject of the surgical treatment of hypertrophy of the prostate, is that castration or resection of the vas deferens is indicated in grave cases in which catheterisation has proved inadequate. Of the two operations I prefer the latter, because it is simpler and less dangerous, while not being less efficacious than castration.—*Helferich.*

ANATOMY.

Dr. Forus in a paper "Anatomical observations which explain why mastoiditis does not occur with more frequency in cases of suppurative otitis media," in *The Laryngoscope*, after referring to the clinical fact that pus only passes in exceptional cases from the tympanic cavity to the mastoid cells, asserts that this is due to the anatomic disposition of the region, "which

is quite different from the description given of it by recognized authorities."

"The tympanic cavity is not an exclusive cavity." It is divided into two great, and other smaller, compartments by fibro-mucous folds, which it is stated, on the whole, are nothing more or less than a species of epithelium, which covers and protects all and each of the structures within the tympanum.

Of the two great compartments, one, antero-inferior, is termed the tubal compartment of the tympanum, whilst the other, postero-superior, is named the atico-mastoid compartment.

The tubal, or antero-inferior, compartment, comprises the Eustachian tube, through which it is continuous with the rhino-pharynx and that portion of the tympanic cavity which is in relation with the tympanum proper, and it is limited posteriorly by the inferior portion of the posterior wall of the tympanic cavity and by the septum, which separates it from the atico-mastoid compartment.

The septum encloses the chain of ossicles; it "originates above the Eustachian tube, and extends along its anterior part, in the form of a tent, from the external to the internal wall of the tympanic cavity." It is described as giving off various expansions, which form ligaments, and as completely dividing the two great compartments.

The compartment above the septum includes the attic, antrum, and mastoid cells.

This division of the tympanic cavity, which the author believes to be normal, serves to explain why catarrhal otitis, by tubal infection, is limited to the antero-inferior, or tubal, chamber. Some time is required before destruction of the septum permits the process to invade the mastoid region.

Dr. Marsh (*Journal of Anatomy and Physiology*) gives an account of an **"abnormal arrangement of the spermatic arteries,"** etc., in a fairly healthy boy, æt. three, who died from shock after an operation for the radical cure of a large congenital hernia on the leftside. The following remarkable abnormalities were found: The right spermatic artery crossed over the middle line about three inches below the umbilicus, and, meeting its fellow of the opposite side just inside the internal ring, joined here with it to form a single trunk, which, passing down the inguinal canal, divided again before reaching the external ring; the two resulting vessels being distributed to the testes in the ordinary manner.

Apparently the right vas deferens was also situated in the left inguinal canal, and it joined its fellow of the left side just after leaving the canal, while there was only one vesicula seminalis.

There existed but one vesicula seminalis—that on the left side. It was considerably larger than normal, and in connection with it there was a very large vas—as thick as an ordinary drawing pencil—which took the normal course as far as half an inch from the internal ring, where it divided into two of equal size. These pursued their way down the inguinal canal into the scrotum, and were connected with their respective testicles in the usual way.

The case is especially interesting from a developmental and anatomic point of view. Unfortunately no reference is made to a left inguinal canal or its openings.

In 217,000 prescriptions written in Chicago, Philadelphia, New York, Boston, Washington, Baltimore, Denver, San Francisco, New Orleans and St. Louis, 11.25 per cent. were proprietary articles.

News and Miscellany.

A very large percentage of the **diseases of the upper air-passages** are incited by adenoids, and while this condition is perhaps often secondary to nasal obstruction, it is, nevertheless, manifest that this inflammatory condition will not subside even when the nasal obstruction is removed. Therefore the removal of postnasal growths is imperative; not only growths but adenoid hypertrophies should be just as surely and as thoroughly removed, and this operation requires a thorough knowledge of the anatomic relation, and skill in the use of the instruments designed for the removal of this hypertrophic tissue, growths, etc. Hypertrophied tonsils should be removed by the amygdalotome, and to be successful must be thorough, so that no fragments protrude beyond the pillars of the soft palate.

Of the diseases affecting this region due to a constitutional condition might be mentioned, first, atrophic rhinitis. A very large percentage of the patients afflicted with this disease succumb to tuberculosis sooner or later, and of those who do not, their prolongation of life may be attributed to favorable hygienic and sanitary environments; also to faithful and careful cleansing of the parts and keeping the physiologic action of the nose in as perfect condition as possible. The best method of doing this is the daily use of the syringe with pure hot water. Not only is this plan of treatment beneficial in removing putrid secretion, but the warmth, irrigation, and massage have an influence in equalizing the circulation and restoring the lost nerve power. As a means of giving rest to these overwrought, worn, and exhausted parts, after such cleansing, it is desirable to find some remedy that will physiologically put the parts in splints. This I believe I have found in the following prescription:

℞ Powdered thiol ..... gr. x;
Menthol ..... gr. v;
Liquid blancolin (Paraffin liquid.).. ʒ j.
M. Sig:—Apply three or four times a day by means of an oil atomizer.

This proves still greater benefit if it can be used as hot as possible consistent with the comfort of the patient.

I was led to make a trial of thiol because of the good results I had obtained in some forms of skin diseases I had treated with this remedy, and I had also found it beneficial as an air-tight dressing in fresh wounds. The foregoing prescription I am using with very satisfactory results after operations within the nasal lumen.—Dr. Armstrong, *N. Y. Med. Jour.*

Dr. A. M. Ritter, of Milo, Ohio, speaks of the especial merits of papine, as an analgesic and sedative. He has had success with it when all other remedies of like character had failed. One case in particular of intestinal indigestion, in a child twelve months old, attended with a great amount of pain, and extreme nervousness, and insomnia. The remedy worked like a charm in relieving pain, and giving rest. It was given in five-drop doses to begin with, as required to give rest and relieve pain. Papine was used in this case for at least six months, in increasing doses, without doing the least harm. It has been now three months since papine has been discontinued, and the child is in perfect health. He considers papine one of the most valuable remedies as a pain reliever and nerve sedative in well-selected cases.—*Cleveland Med. Jour.*

The American Medical Association.—*Section on Materia Medica and Therapeutics.*—The following papers and discussions have been promised for the meeting at Denver, Col., June 7-10, 1898:

"Yellow Fever: Its Etiology and Treatment." Discussion Surgeon-General George M. Sternberg, M.D.,

Washington, D. C.; Prof. John Guitéras, M.D., Philadelphia; Sollace Mitchell, M.D., Jacksonville, Fla.; T. S. Scales, M.D., Mobile, Ala.; G. B. Thornton, M.D., Memphis, Tenn.; H. M. Bracken, M.D., Minneapolis, Minn.; P. E. Archinard, M.D., New Orleans, La.; Prof. William H. Welch, M.D., Baltimore, Md.; Captain R. S. Woodson, M.D., Assistant Surgeon United States Army, Fort McPherson, Ga.; Prof. William Pepper, M.D., LL.D., Philadelphia, Pa.

"Aims of Modern Treatment of Tuberculosis." Prof. Edwin Klebs, M.D., of Chicago. Discussion, Charles Denison, M.D., of Denver, Col.; Prof. William Pepper, M.D., LL.D., Philadelphia, Pa.; Prof. William H. Welch, M.D., Baltimore, Md.; Prof. William E. Hughes, M.D., Philadelphia, Pa.

"Serum-therapy of Tuberculosis." Prof. S. O. L. Potter, M.D., San Francisco, Cal. Discussion, Prof. James M. Anders, M.D., Philadelphia, Pa.; C. C. Fischer, M.D., St. Louis, Mo.

"The Therapeutics of Pulmonary Phthisis." Paul Paquin, M.D., St. Louis, Mo.

"The Practical Value of Artificial Serum in Medical Cases." P. C. Remondino, M.D., San Diego, Cal.

"The Present Status of Serum-therapy." George W. Cox, M.D., Chicago, Ill.

"Biologic Activity of the Antitoxins." Prof. Joseph McFarland, M.D., Philadelphia, Pa.

"Glandular Extracts." Prof. Isaac Ott, M.D., Easton, Pa.

"The Use of Remedies in Diseases of the Heart and Blood-vessels." T. Lauder Brunton, M.D., D.Sc., F.R.S., London.

"The Mescal Button." Prof. D. W. Prentiss, M.D., Washington, D. C., and F. P. Morgan, M.D.

"The Modern Intestinal Antiseptics and Astringents." William Frankhauser, M.D., New York. Discussion, Boardman Reed, M.D., Philadelphia, Pa.

"A New Non-amylaceous Flour for Diabetics and Dyspeptics." N. S. Davis, Jr., A.M., LL.D., Chicago, Ill.

"The Solution of Ethyl Nitrite." D. J. Leech, M.D., Manchester, Eng.

"A Contribution to the Effects of Coffee in Excess." Prof. William Pepper, M.D., LL.D., Philadelphia, Pa.

"The Treatment of Insomnia." Robert T. Edes, M.D., Jamaica Plain, Mass.

"Are there Therapeutic Principles?" Solomon Solis-Cohen, M.D., Philadelphia, Pa.

"To What Extent is Typhoid Fever Favorably Modified in Its Course, Duration, Termination or Sequelæ by the Administration of Drugs?" Frank Woodbury, M.D., Philadelphia, Pa.

"Strychnin." J. N. Upshur, M.D., Richmond, Va. Discussion, Prof. J. H. Musser, M.D., Philadelphia, Pa.; Walter M. Pyle, A.M., M.D., Philadelphia, Pa.

"Methods of Teaching Materia Medica and Therapeutics." Prof. G. H. Rohé, M.D., Baltimore, Md.

"The Study of Materia Medica and Therapeutics." H. M. Bracken, M.D., Minneapolis, Minn.

"A Contribution to the Pharmacology of Cannabis Indica." C. R. Marshall, M.A., M. B., Pharmacologic Laboratory, Downing College, Cambridge, Eng.

"The Place of Hydrochloric Acid in the Treatment of Diseases of the Stomach." Boardman Reed, M.D., Philadelphia, Pa.

The Continuous Use of Digitalin in the Vasomotor and Cardiac Lesions of Senility." Henry Beates, Jr., M.D., Philadelphia, Pa.

"Home Remedies *Versus* Patent Medicines." Prof. Adolph Koenig, M. D., Pittsburgh, Pa.

"Opium in Bacterial Diseases." J. P. Farnesworth, M. D., Clinton, Ia.

"The Great Therapeutic Importance of a Rational Adaptation of Cathartic Remedies to the Physiologic Functions of the Gastro-intestinal System." E. D. McDaniels, M.D., LL.D., Mobile, Ala. Discussion, Prof. John M.Dunham, A.M., M.D., Columbus, O.

"A Recognition of Temperament: a Factor to the Selection of Remedies, and their Dosage in Disease." J. E. Moses, M. D., Kansas City, Mo.

"On Some Preparations of the National Formulary." C. Lewis Diehl, Ph.G., Louisville, Ky.

"The Use of Stimulants in Acute Diseases." E. B. Hershey, M.D., Denver, Col.

"Codeina." A. K. Minich, M.D., Philadelphia, Pa.

"Therapeutics of Idiopathic Epilepsy." Prof. J. N. Barnhill, A.M., M.D., Columbus, O.

"The Use of Drugs in Diseases of the Uterus." Prof. John M. Dunham, A.M., M.D., Columbus, O.

"Why the Pharmacopeial Preparations Should be Prescribed and Used by the Profession." Leon L. Solomon, M.D., Louisville, Ky.

"The Use of Electricity by the General Practitioner." Caleb Brown, M.D., Sac City, Ia.

"The Relation of Pharmacal Legislation to Pharmacal Education." Willis G. Gregory, Ph.G., Buffalo, N. Y.

"The Uric-Acid Diathesis: Its Cause and Maladies Resulting from It. Is it a Cause of an Effect of Bright's Disease of the Kidneys?" H. V. Sweringen, M.D., Fort Wayne, Ind.

"The Sulphocarbolates." Prof. William F. Waugh, M.D., Chicago, Ill.

"Incompatibles." E. A. Ruddiman. Ph.M., M.D., Nashville, Tenn.

"Fraudulent Claims—The Remedy." C. C. Fite, M. D., New York.

"The Selection of Diuretics and Lithontriptics in Diseases of the Urinary Tract." Ernest L. Stephens, M.D., Fort Worth, Texas.

"Life-history of the Bacillus Tuberculosis in its Relation to the Treatment by Tuberculin." Robert Reyburn, M.D., Washington, D.C.

"The Chemistry of the Albuminates." F. E. Stewart, M.D., New York.

The following have also promised papers, subjects to be announced very soon, together with the day assigned for each discussion and paper:

Dr. R. S. Woodson, U. S. A., Fort McPherson, Ga.; Dr. Dudley W. Buxton, London, Eng.; Prof. I. E. Atkinson, Baltimore, Md.; Prof. George F. Butler, M.D., Chicago, Ill.; Prof. Joseph P. Remington, Philadelphia, Pa.; Prof. Ernest B. Sangree, A.M., M.D., Nashville, Tenn.; Dr. L. A. Sayre, Lawrence, Kas.; Dr. T. M. Balliet, Philadelphia.

The chairman, John V. Shoemaker, M.D., 1519 Walnut St., Philadelphia, Pa., will be pleased to receive and place upon the program subjects for discussion and papers.

By the term **malt extract, a thick evaporated aqueous extract of malt** is understood. Such an extract, first only prepared by the apothecary according to the directions of Liebig and used as a medicine, is at the present time seldom, if ever, prepared by the pharmacist, but by a comparatively few manufacturers in immense quantities. Formerly, the evaporation was carried on over a naked fire in the shortest possible time, entailing thereby a loss of much of the proteid constituents, the destruction of the diastase and occasioning the formation of a number of decomposition products, which greatly impaired the odor, taste and general appearance of the finished product. In order to overcome these objectionable features, the concentration is now carried on at a comparatively low temperture, below 46.6° (116° F.), combined with the use of the vacuum.

Dry substance	73 -75	per cent.
Maltose	62 -67	per cent.
Dextrin	2.5- 4	per cent.
Proteids	3.0- 4.5	per cent.
Ash	1.3- 1.5	per cent.

Phosphoric acid	0.36-	0.5 per cent.
Lactic acid		1.0 per cent.

The malt extracts are not infrequently adulterated with considerable quantities of saccharose and glycerol. These, however, can be readily determined either approximately or accurately. Of considerable importance besides its use as a food is its fermentative or diastatic power. A good malt extract should convert into dextrin at least an equal weight of boiled starch in ten to fifteen minutes at 55° C. In determinations of the diastatic power of malt extracts the method of Dunstan and Dimmock has deservedly secured much preference.

The method is briefly:

1. A one per cent. mucilage is prepared from perfectly dried potato starch or arrow-root (other varieties of starch are not adaptable) by triturating the starch with cold water, then pouring it into boiling water and boiling thirty minutes, allowing to cool and filling up to the required volume with water.

2. A one per cent. aqueous solution of the malt preparation.

3. An aqueous solution of iodin in iodid of potassium solution, representing 0.1 gr. iodin and 0.2 gr. iodid of potassium in 100 cc.

Procedure: Fifty cc. of the starch mucilage is measured into a flask and heated to 55° C. in a water-bath; then the one per cent. malt solution is run in from a buret, again placed in the water-bath, and after ten minutes a few drops of the contents of the flask tested on a porcelain test-plate (or a glass plate, placed over a piece of white paper), with a drop of the iodin solution. Should it give a blue color more one per cent. malt solution is added, again warmed and again tested after ten minutes. The blue color noticed at first is replaced by a violet, and finally by a red color, denoting the conversation of the starch to erythro and achroodextrin.

The higher the diastatic power of a malt preparation, of course, the greater its value as a digestant of amylaceous foods, and consequently it may prove a meritorious article in the treatment of amylaceous dyspepsia, so prevalent in this country.

That a malt preparation of the same manufacturer possesses at times a varying digestive value is quite true; still a reasonable limit should be asked for and attained, and yet not be asking too much of the manufacturer. It may also be true that a preparation of malt when freshly made can have a certain converting power, which, after a number of months, it has lost in a measure. While this may be partly due to the method of keeping it in stock after it has left the manufacturer's hands, still the latter is also responsible for furnishing a preparation which is subject to too great variations, within certain reasonable alterations of temperature and lapse of time.

Again, analytic results would tend to show that quite often the plain extract of malt and malt with a combination, say of cod-liver oil or hypophosphites, etc. is not of the same diastatic power; that is to say, the malt extract used in preparing the combinations is of lower digestive worth than that used in the plain extract, and this is often the case in preparations from the same factory. It therefore seems as if such combinations were made from a second extraction of the malt or an inferior grade of the extract.

Probably the principal reasons which have caused some of the medical profession to abandon the use of malt and its preparations in the past have been the variation in digestive power, the thick, gummy consistence and the unsightly turbidity of the finished product. This disfavor is not to be wondered at when we consider that it is possible to obtain a preparation of definite diastatic power, of thin, syrupy consistence and a perfectly transparent pleasing appearance.

The use of malt extracts as emulsifying agents undoubtedly possesses advantages; especially is this the case with oils, and particularly with cod-liver oil. Here, if no gum be added other than that present in the extract itself, the integrity of the oil is not disturbed, as is the case with some of the emulsions now before the profession, where, not content with the addition of considerable quantities of difficultly absorbable gums, alkalies are added and thereby the formation of objectionable hydroxy acids greatly favored.

Power of converting arrow-root starch into erythro and achroodextrin in ten minutes (or maltose and isomaltose by longer action):

		Grammes Malt	Grammes Starch
1.	Maltzyme, plain	1	4.902
2.	Maltzyme, plain	1	5.102
3.	Maltzyme, with cod-liver oil	1	3.572
4.	A malt extract, plain	1	2.659
5.	Same, with cod-liver oil	1	0.250
6.	Another malt extract	1	2.273
7.	Same, plain	1	0.433
8.	Same, with cod-liver oil	1	0.489

There is a Jew, a native of Litsk, Russia, living in the East End of London, who has **fasted for twenty years,** his sole daily diet during that time consisting of six pints of milk, three pints of beer, and a half pound of Demerara sugar. His name is Morris Fox. He is an excellent Talmudical scholar, and in spite of his frugal meals, he is the most healthy, intelligent and wide-awake person in his quarter. He is now over forty. At the age of seventeen, it appears, he caught some lingering fever, which shattered his constitution and entirely destroyed his digestive organs. He took many kinds of treatment from many physicians, until his stomach became inured to all medicine. At the Kieff Hospital they vainly tried to cure him by sponging and electrolysis; at Vienna his physicians included the well known Drs. Albert and Nothnagel. His treatment at Carlsbad was a failure; then he traveled to Königsberg, when the physicians decided that he must live on sugar, milk, and beer. He adopted their prescription, and soon regained normal health. For twenty years no solid food has passed his mouth.—*Univ. Med. Mag.*

The Dietetic Uses of Olive Oil.—Olive oil is now used in many ways at one time never thought of. Besides being largely used medicinally, observes *Sanitary Record,* it enters into various processes of cooking much more extensively than it did. In massage, bathing, and for numerous other purposes, the use of this most natural valuable food is greatly extending. The value of good olive oil is beginning to be more generally recognized throughout the world than it formerly was. Eminent authorities have experimented with it, and found it a potent agent for many defects of the excretory ducts, especially the skin. Eczema has rapidly disappeared upon the discontinuance of starch foods and a substitution of a diet of fresh and dried fruits, milk, egg, and olive oil. Its beneficial effects when taken in conjunction with a fruit diet have frequently been marked upon the hair, nails, and scalp, and supplying to the sebaceous glands the only substance which they secrete when in a healthy condition, and the absence of which is the cause of debility of the hair, frequently ending in baldness. It has long been observed that those who live upon olive oil as a common article of food, and take it as such, are generally healthier and in better condition than those who do not. Its therapeutic and prophylactic properties are now well known to medical men. Oil is destructive to certain forms of micro-organic life, and it is reasonable to suppose that they can best be eradicated from the system by its internal use. The use of oil not only does this, but it restores to the worn-out or diseased tissue just those elements of repair that its reconstruction demands.

PARTURITION.—ALETRIS CORDIAL (Rio), given in teaspoonful doses every hour or two AFTER PARTURITION is the best agent to prevent after-pains and hemorrhage. By its DIRECT tonic action on the uterus, it expels blood clots, closes the uterine sinuses, causes the womb to contract, and prevents sub-involution. In severe cases, it can be combined with ergot in the proportion of one ounce of fluid Ext. Ergot to three ounces ALETRIS CORDIAL (Rio). It is the experience of eminent practitioners, in all cases where ergot is indicated, that its action is rendered much more efficacious by combining it with ALETRIS CORDIAL (Rio) in the proportions above stated.

A sample bottle will be sent free to any physician who desires to test it, if he will pay the express charges.

RIO CHEMICAL CO., St. Louis, Mo., U. S. A.

Daniel's Cont. Tinct. Passiflora Incarnata.

A Product of the May Pop, combining the rare medicinal qualities that are NATURE'S antidote to nervousness; and a POSITIVE CURE for the Opium Habit, Spasmodic Asthma, Insomnia, Delirium Tremens, Neuralgia, Epilepsy and diseases peculiar to women.

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Nostrum-advertising is a sad disgrace, but not by any means so great a disgrace as the widespread indifference of physicians to the fact, and their failure to support those journals published for and by the profession. There is no act more ethical—or inethical—than the subscription by an American physician to a medical journal.—*Philadelphia Medical Journal.*

Navy Medical Corps.

It is nonsense for the government to give out that the difficulty it finds, and has found for years, in making any near approach to filling the corps is due to the stringency of its requirements. We have no hesitation in saying that the examinations for the medical degree are more exacting at any one of at least five of our medical schools than those that a man has to pass in order to enter the medical corps of the navy. It is the insufficient pay and the natural aversion to being treated as underlings that keep men out of the service. War may at least have the good effect of opening the eyes of congressmen to the desirability of making the naval medical service attractive enough to keep the corps filled with suitable men.—*New York Medical Journal.*

Professional Success.

Listen and we will try to candidly tell you why so many physicians are complaining, just as many people in other professions or vocations are complaining, not because they do not toil, but rather because they are so intensely devoted to their profession or vocation as a science that they have no time left to devote to the business side of their vocation or personal appearance or comforts, of themselves or families.—*Charlotte Medical Journal.*

Accident Insurance.

We think that every physician without indepentent means should carry an accident policy, and, at the same time, should be careful to deal with a reliable company and have due regard to special clauses relating to septicemia. In expressing these views with reference to accident insurance we have no desire to ignore the question of life insurance, which is of paramount importance. The receipt of $25 or $50 a week by a physician who is incapacitated for work through an accident is rather comforting to the family. All things considered, we would be inclined to give life insurance first place and, at the same time, give the accident insurance a good second.—*Canadian Practitioner.*

LISTERINE

THE STANDARD ANTISEPTIC.

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Clinical Records.—A hedge doctor (a quack) in Ireland was being examined at an inquest on his treatment of a patient who had died. "I gave him ipecacuanha," he said. "You might just as well have given him the *aurora borealis*," said the coroner. "Indade, yer honor, and that's just what I should have given him next, if he hadn't died."—*St. Thomas' Hospital Gazette.*

Tinea Tonsurans.—In a report of an epidemic of twenty cases of tinea tonsurans Dr. G. Gordon Campbell, assistant physician, Montreal General Hospital, gives the following summary of the nature of the fungus: Thirteen, or sixty-five per cent. were classed as microsporon Audoini; four, or twenty per cent., as trichophyton megalosporon endothrix; and the remainder, fifteen per cent., could not be determined. This proportion of the two varieties corresponds very nearly to the results obtained by the examination of cases in the Montreal General Hospital. The large majority of our cases are due to the small-spore form.

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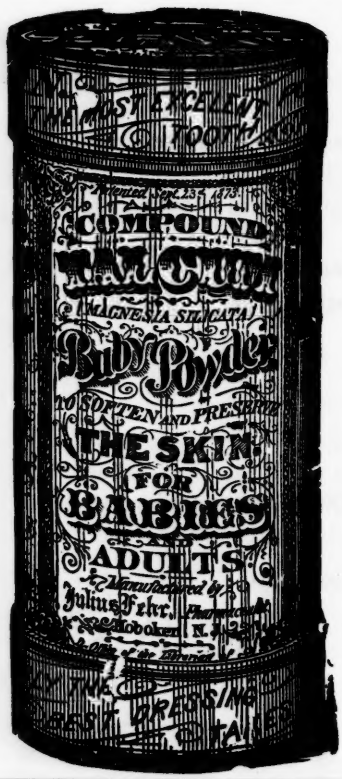
In the twenty-six hospitals, in the year 1895, 75,368 patients were treated free, and in the dispensaries 661,803, making a total of 737,171. This is a goodly proportion out of a 1,851,000 population—nearly forty per cent. There have been 92,529 free visits of patients to hospitals, and 1,387,170 free visits of patients to dispensaries. In attendance upon the 114 dispensaries in 1895 were 949 medical men, which is twenty-seven per cent. of all the physicians in the city, who number 3,430. Here we have more than 1,500,000 free visits and more than 1,000,000 free prescriptions, and more than one-quarter of all the physicians in the city of New York engaged in treating the population free of charge. —*The Engineer.*

Operations on the Stomach.—Carle and Fantino (*Il Polichinico*, March 15th, 1898,) publish a first instalment of considerations upon 102 operations upon the stomach performed by them in the last few years. In the present number they deal with 83 operations upon the pylorus; of these, 44 were cases of non-malignant pyloric stenosis. The authors deal at some length with the bad effects resulting from prolonged retention of food in the stomach, and point out that this of itself may be a cause of hyperchloridria. The few cases of pyloric stricture where hypochlorhydria or anachlorhydria was present could be explained in other ways. Excess of acid does not hinder fermentation, but may increase it by delaying the digestion of amylaceous food. Of the 44 non-malignant strictures, 30 were cicatricial, 9 spasmodic, 3 due to gastric atony, and 2 to stricture of the duodenum. In 4 cases cicatricial contraction of the pylorus followed very soon after the swallowing of corrosive acids. The position of the cicatrix here is explained by the fact that when the stomach is empty and retracted the pylorus is the lowest point, the lesser curvature being nearly vertical. In eight cases where there were unmistakable signs of previous ulcer hematemesis had occurred only three times. There was evidence of peripyloritis in nineteen out of forty-four cases. This strengthens the author's view that spasm of the pylorus is due to some local alteration of the mucous membrane—for example, anal fissure. As regards operative treatment, twenty-seven were treated with gastro-enterostomy, three by digital divulsion, and 14 by pyloroplasty. There is a full discussion as to the relative value of anterior or posterior gastro-enterostomy, with a decided opinion in favor of the latter method.



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When a patient comes to you with enlarged lymph nodes of the neck, be sure to examine the throat most carefully. If the patient is a child, remember that a very common cause of lymph node inflammation is the presence of hypertrophied tonsils or of adenoid vegetations. In an individual of middle age, examine any hypertrophy critically, bearing in mind the possibility of neoplasm.

The anesthetic is very often as much or more to be feared than the operation. This is especially so in the case of old persons and those who suffer from chronic or acute lung, heart, or kidney disease. The greatest care should be taken that no more of the narcotic than is absolutely needed should be used. Oftener than is admitted, death from the anesthetic is due to lack of care or experience on the part of the anesthetist. When you are about to operate upon an individual who will probably take general narcosis badly, try local anesthesia. You will often be surprised at the apparently formidable operations which may be done with the aid of cocain or eucain.

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TRY IT IN PRACTICE.

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Try it in ***Consumption,*** with the same tests from week to week.

Try it in ***Dyspepsia*** or Malnutrition of young or old, and watch the recuperation of the paralysed alimentary powers.

Try it in ***Intestinal*** or gastric irritation, inflammation, or ulceration, that inhibits food itself, and witness the nourishing, supporting and healing work done entirely by absorption, without the slightest functional labor or irritation; even in the most delicate and critical conditions, such as Typhoid Fever and other dangerous gastro-intestinal diseases, Cholera Infantum, Marasmus, Diarrhœa, Dysentery, etc.

Try it per rectum, when the stomach is entirely unavailable or inadequate.

Try it by ***subcutaneous*** injection, when collapse calls for instantaneous blood supply—*is* much better than blood-*dilution!*

Try it on ***Chronic Ulceration,*** in connection with your antiseptic and stimulating treatment (which affords no nourishment) and prove the certainty and power of topical blood nutrition, abolishing pus, stench, and PAIN, and healing with magical rapidity and *finality.*

Try it in ***Chronic Catarrhal*** Diseases; spraying it on the diseased surfaces, with immediate addition of peroxide of hydrogen; wash off instantly the decomposed exudation, scabs and dead tissue with antiseptic solution (Thiersch's); and then see how the mucous membrane stripped open and clean, will absorb nutrition, vitality and health from intermediate applications of pure bovinine.

Try it on the ***Diphtheritic Membrane*** itself, by the same process; so keeping the parts clean and unobstructed, washing away the poison, and meanwhile sustaining the strength independently of the impaired alimentary process and of exhaustive stimulants.

Try it on ***anything,*** except plethora or unreduced inflammation; but first take time to regulate the secretions and functions.

Try it on the ***patient*** tentatively at first, to see how much and how often, and in what medium, it will prove most acceptable—in water, milk, coffee, wine, grape, lemon or lime juice, broth, etc. A few cases may even have to begin by drops in crushed ice.

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